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ABSTRACT

Based on the premise that an understanding of the historical context of educational innovation in American public schools is necessary to selectively choose from the great variety of current reform propositions, this report reviews trends in education from the turn of the century. The first section presents a critique of turn-of-the-century public education in America, with a focus on the development of the scientific management movement and the corporate model of school governance. Pedagogical progressive and social reconstructionist movements in education are discussed in section 2. Reasons for resistance to educational change are examined in the third section, and a postwar retrospective on school improvement is offered in section 4. The fifth section looks at the restructuring of education and the economy, specifically, the crisis of competitiveness and its implications, elements of restructuring, examples of restructuring efforts, and a critical appraisal of reform movement prospects. Recommendations for reform and educator advocacy are presented in the final part. An extensive bibliography is included. (LMI)

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In Its Own Image

Business and the Reshaping of Public Education

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Education reform has become a permanent feature of the educational landscape. Although many within and outside of education viewed the criticism of public education that accompanied the 1983 publication of *A Nation at Risk* as temporary, the voices of criticism have become louder and more numerous. A welter of commission reports, blue ribbon

task forces on education, and both public and private initiatives remind us daily of the problems in our schools. The very persistence of the most recent education reform movement and the degree of societal support it enjoys distinguish it from most other efforts at educational change in the twentieth century.

On the other hand, there is a surprising lack of coherence and sense of common purpose about the proposals designed to foster meaningful change in schools. The leopard that is education reform has already changed its spots many times. Problems are specified and solutions are offered willy-nilly. One set of proposals underscores the development of higher-order cognitive skills, while another set focuses on standardized tests scores. One reformer zeroes in on instructional outcomes and another on the organization of schooling. One group sees the instructional leadership of the principal as the key to instructional improvement, while yet another sees teacher

empowerment as the most critical element in successful change. In this respect, there is not one education reform movement, but many.

The importance now accorded to efforts at educational improvement and renewal compels us to come to a clear understanding of the roots of the present educational crisis. Some obvious questions remain to be answered. How did we get to where we are? What are the major forces for change? In what directions is public education being pushed? In providing some preliminary answers to these questions, we can begin to think more effectively and strategically about the wisest course of action to pursue today.

To understand the problems of public education, it is necessary to go back at least to the turn of the century, when the cornerstones of our present system of public education were laid. At that time, profound economic and demographic changes were prompting educational change on a massive scale. Rapid industrialization, urbanization, and unprecedented waves of immigration had rendered the existing system of schools obsolete. Scathing criticism of schools in popular magazines such as the *Ladies' Home Journal* galvanized the American public for change. Under fire, educators responded with a wholesale importation of concepts and practices from the leading sectors of American business. Corporate-style boards of education, centralized administrations, rationalized accounting systems, standardized operating procedures, and various scientific management practices were all implemented to improve public education. Ironically, many of these solutions of yesteryear have become the problems of today. The rigid, unwieldy bureaucracies, low employee autonomy, and the factory-like organizations that we see in many schools and school districts actually had their origins in this period of change.

Today, we are at the crossroads of change. The emergence of a truly global market for goods and services, the intensification of international competition, the rapid spread of information technology, and dramatic changes in the way highly competitive companies are organized suggest the need for a new kind of work force—highly educated, critical thinkers who are capable of working autonomously and learning on their own. Only this kind of work force will give our nation's companies the ability to respond to the challenge of global competition. Recognizing this, executives of

leading companies and national policy forums have called on educators to prepare our young citizens for new and expanded roles in the workplace. The problem with this is, however, that even while the world changes around them, most American companies continue doing business the same old way. This means they do not need many workers who have more than basic skills.

Educators are thus caught between the demands generated by a rigid and obsolete mode of organizing the workplace and a new, competitive mode of workplace organization that is only just beginning to emerge (Reich 1988). If we continue to equip people for the low-skilled, routinized jobs (around which most workplaces are currently organized), then we foreclose (perhaps forever) the option of creating a high-wage, high-productivity economy. On the other hand, if we educate people for a high-wage, high-productivity economy, then the American workplace must be reorganized to take advantage of those new skills. In at least this respect, education and economic policy have to be considered in tandem.

Like the education reform movement, this publication is focused on the high-wage, high-productivity option for the economy. If we thought that our economy would take the path of low skill (and hence, low productivity), then our education system could remain as it is with only minor adjustment. This would mean, however, that we would ransom our future with our present, accepting as inevitable the steady decline of our standard of living. If the United States wants to remain economically healthy over the long term, our companies and, by implication, our system of education will have to embrace change.

But, what should education in the new society look like? This is the locus of debate. It is in answer to this question that the lessons from the early twentieth century reform movement become important.

As was the case with the reorganization of American education in the early years of the twentieth century, members of the business community and educators who are following their lead are suggesting reforms that stem from the American business community's recent lessons on how to compete in a global economy. Ideas from the cutting edge of business have once again become education's leading concepts. Some of these ideas make good educational sense. Some do not. In this sense, history appears to be repeating itself.

The contemporary reform movement has the potential to touch all levels of the education system—from management to classroom practice. It will take some time for a consensus to emerge about what schools ought to look like, but significant change in schooling is likely to occur. For the first time since the turn of the century, change is being driven by economic concerns and not by purely political considerations. In fact, the most significant political considerations involved in education reform are themselves driven by the economy.

The economic concerns undergirding contemporary reform make it imperative that the National Education Association and its affiliates understand some of the forces behind the push for reform and respond appropriately. Whether change becomes an organizational threat or a valuable opportunity depends in large measure on our understanding of it. The history of the way in which economic change has both prompted and influenced educational change in the twentieth century provides us with a strategic framework in which to view the eddies and currents of the contemporary reform movement.

Schools have become the lightning rod for concerns about the quality of life and the competitive health of the United States. Educators are told that contemporary schooling no longer meets the needs of our complex and rapidly changing society. Businesses pine publicly for qualified workers. Directories are required to keep track of the commissions that are making recommen-

dations to the educational community. As we experience the pangs of change, we must understand its historical context. The kinds of things we are experiencing are neither unique nor historically unprecedented. The United States public education system has gone through the convulsions of change before. How educators responded and the effects their responses have had on the present conditions of education contain enormously important lessons for us. As we face the certainty of change, we confront the uncertainty of its effects on our lives. We cannot control it, but we can avoid some obvious mistakes.

- *Near the turn of the century, public education was barraged with criticism.*

Public education was assailed for not preparing students to cope with dramatic changes in the larger society. Industrialization, urbanization, and immigration were among the most obvious economic and social changes. In a 1912 article in the *Ladies' Home Journal*, Frederic Burke,

president of the San Francisco State Normal School, pointedly asked what schools and scholars were doing "to fit the next generation to be skilled workmen" in the nation's workshops.

Reformers wanted change, but they did not want to spend additional monies. Consequently, one of the strongest currents of criticism concerned educational waste and inefficiency. Elaborate calculations showed the taxpayers how much money was being wasted by the system.

In addition, critics highlighted the schools' failure in teaching basic skills. One early critique of schools focused on the millions of Americans who were unable to read and write.

In criticisms similar to those directed at public education today, these early reformers raised concerns about the social utility of education, its inefficiency, and the need for a major reorganization of education.

- *The criticism of education was both prompted and directed by major changes in the American economy and society.*

The period extending from the later years of the nineteenth century to the early years of the twentieth century was witness to the rapid growth and consolidation of American industry. The enormous size of American corporations permitted their unprecedented control over product markets. Newly minted captains of industry like Andrew Carnegie enjoyed extraordinary influence over American social and political life, some of which was used to redirect the existing education system.

In addition to their growing size, corporations began to organize and use scientific research in their production process. Scores of research laboratories sprang up within corporations or as a result of corporate funding. As part of the rise of science-based industry, engineering and engineers came to have an inordinate influence in corporate life.

Engineers were among the leaders in applying the intellectual methods of science to the administration of rapidly growing corporate organizations. They streamlined such corporate activities as reporting, accounting, and the

organization of production. To reduce waste, managers and engineers rushed to embrace the new philosophy of scientific management, which sought to gather production knowledge from a firm's workmen and move it to the corporate office. Once appropriated, the knowledge was used as the basis for planning the work of individual workers. At the time of the great barrage against education, scientific management was surely the most popular of all managerial philosophies.

- *As waste and inefficiency became central issues in education reform, superintendents followed the lead of private sector managers in adopting scientific management and financial principles to organize education.*

Franklin Bobbitt, one of the leading thinkers on educational efficiency, flatly told educators that "all kinds of organizations, whether commercial, industrial, governmental, educational or other, are equally and irrevocably subject to the same general laws of good management."

In the education efficiency movement, financial considerations became synonymous with educational considerations. For example, one superintendent advocated using comparisons of costs per course and per pupil hour as a basis for making decisions about the curriculum.

As schools modeled themselves on corporations, school governance came to resemble corporate governance (at least in its general shape). An elected board set overall policy for the superintendent (a CEO-like expert manager). A central office staff supported the superintendent's functions just as corporate staff organizations support the work of top executives. Below the superintendent, the principals (the functional equivalent of middle managers) transmitted instructions to the teachers or employees.

Beyond the superficial resemblance, school executives came to share some of the key assumptions of their corporate counterparts. In the early part of the twentieth century, Franklin Bobbitt said it was the supervisors who determined the qualifications of the work force and who were responsible for providing workers with detailed instructions on the work to be done, the methods to employ, and the material to be used in accomplishing the work. Power in the "scientifically managed" educational system resides in a district's managerial levels and not among its professionals.

It is ironic that around the same time (1910) that the Flexner report was setting in motion the activities that would further professionalize medicine, education was becoming industrialized.

As school officials searched for methods to measure educational progress, the star of standardized tests rose high in the educational firmament. In 1912, one superintendent told educators that a few standardized tests carried more weight with the businessman and the parent than all the psychology in the world. Corporations had their profit and loss statements and school districts had their test scores.

Just as science-based industry married the engineer and science to the process of production, the commercial publishing industry married the expert and researcher to the educational textbook. The little autonomy permitted teachers in the hierarchical system of school governance described above was further circumscribed by the expert knowledge in textbooks and teacher workbooks chosen by others for teachers to use in their classrooms.

For students, the efficiency movement offered tracking. One assumption of the efficiency movement was that each person should be given the education he or she required. In other words, plumbers and street car conductors should not be given the education reserved for classical scholars. Students were compared to raw materials that had to be processed in different ways. The sorting process was aided by standardized intelligence testing processes, which, with minimal difficulty and expense, permitted districts to assign numerical values

to individual students and process them accordingly. Even today, the amount and complexity of knowledge imparted to an individual reflects a district's assessment of that individual's life chances.

- *At a time in our history when it has become critical that people from all walks of life make greater contributions to our economic and social life than ever before, tracking and other educational derivatives of scientific management have left today's educators with a dubious and problem-ridden inheritance.*

Yesterday's solutions have become today's problems. Bloated central bureaucracies; low teacher autonomy; a rigid, differentiated curriculum; reliance on quantitative measures of student progress; and a focus on waste rather than on the responsible allocation of public funds are some examples of this tradition's bequest to contemporary education.

Perhaps even more serious than all of these problems is the lack of flexibility to deal with change that rigid hierarchies have thus far exhibited. As one principal interviewed in 1983 as part of a study of American high schools observed, "Changes come and go, but in the end, life here stays pretty much the same" (quoted in Boyer 1983).

- *At the time the efficiency movement was rationalizing and standardizing public education, other significant currents of educational change existed.*

Even as education's "engineers" sought to make education a reflection of the adult world and a funneling mechanism for the increasingly complex, social division of labor, pedagogical progressives such as John Dewey encouraged child-centered education. To these reformers, education was responsible for determining how children learned and for providing an appropriate environment. Education in this tradition

stressed learning experiences rather than drills and memory tests.

Pedagogical progressives emphasized broad, well-rounded programs that would enable children to think critically, handle complexity, and be self-directed. In Dewey's view, early twentieth-century society was too complex and made too many demands on its citizens to be based on custom and tradition.

In contrast to the corporate model of school governance that placed severe constraints on the power of teachers, the pedagogical progressives supported the empowerment of teachers. If teachers were not empowered, education would be nothing more than an external corpus of concepts and principles applied to the child. In this view, it is teacher empowerment that makes education a living experience.

The social reconstructionists, whose educational heyday was the Depression era, sought to use education as a means to redress pervasive social injustice.

- *Neither of these perspectives had anywhere near the influence on American education enjoyed by the proponents of educational efficiency. The relative unimportance accorded them has a special irony today. Many of the demands of contemporary education (e.g., teaching higher-order cognitive skills, teacher empowerment) reflect the essential precepts of these other schools of thought.*

- *Today, just as in the early years of the twentieth century, our economy is undergoing rapid change.*

The diffusion of advanced manufacturing technology throughout much of the world and the removal of barriers to the international movement of capital have created a competitive crisis of unprecedented dimensions for the United States. With the emergence of a truly global market for goods and services, many American firms have found themselves unable to respond to rapid changes in product markets.

As new, flexible automation and other forms of information technology are introduced into the American workplace, many managers have begun to introduce significant changes in their firm's management structure, workplace design, and human resources policies.

- *The crisis of competitiveness, changes in product markets, and new, information technology have all contributed to a radical rethinking of conventional management wisdom.*

Leading executives today talk about smaller, simpler organizational structures to respond to highly differentiated, changeable product markets. Large, central hierarchies are out. Small, flat organizations are in. Authority in the emerging corporation is more evenly distributed. The reduction of the number of management layers often signals a corresponding increase in decisionmaking authority for all employees.

While many companies remain mired in the old-fashioned hierarchies of the past, it is becoming increasingly clear that change of the type described above is necessary if companies are to stay competitive.

- *If changes in management thinking, technology, and corporate organization occur on a massive scale, they will produce equally significant changes in jobs.*

The informal know-how required by older technologies will be replaced by the symbolic reasoning required by new, information technology.

The blurring of the distinction between workers and managers occasioned by the changes discussed above means that, on the whole, jobs will become more complex. Rapid changes in products and production technologies signal frequent changes in job content. There is a general consensus that the jobs in a high-productivity economy will require more education, higher-order cognitive skills, and the ability to learn continually on the job.

● *These increased demands on education will be compounded by changing student demographics. In future years, a growing number of students will be drawn from minority and immigrant populations, a disproportionate number of whom come from impoverished backgrounds.*

Our nation's education system will be sorely taxed by growing numbers of poor children. Children who live in poverty are three times as likely to drop out of school as children who live above the poverty level. The problems induced by poverty will be compounded by linguistic and cultural barriers between students and teachers. Not since the early years of the twentieth century have so many non-English-speaking immigrants entered our schools.

● *In the same way that the earlier economic and social transformation of the United States provoked a radical reorganization of education, the economic and social changes of a high-wage, high-productivity economy (some of which the United States is currently experiencing) will result in an appropriately dramatic reorganization of education.*

No clear consensus has yet appeared on the shape of schools to come, but some distinct strains of change have emerged in the reform movement.

Bigger is not necessarily better. The huge, impersonal high schools, for example, are being turned into self-contained institutes and schools within schools in some communities.

Many reformers today say that schools need the discipline of the marketplace. As business finds itself in an increasingly competitive environment, we have seen a parallel call for districts to foster competition among schools through universal choice plans (see Kearns and Doyle's *Winning the Brain Race*, 1988). In addition to intraschool competition, the ideology of the marketplace can be seen in such developments as district takeovers (Chelsea, Massachusetts) and warranties offered to local businesses on student skills (Plymouth, Massachusetts).

Employee empowerment is now fashionable in educational circles. As leading American businesses respond to competition by drawing more on the skills and knowledge of their employees, schools are urged to do the same. Ironically, the current force behind

teacher empowerment is not the much older tradition of progressive education, but the private sector's embrace of the concept.

Innovation, not stability, is the new watchword in education. Just as business responded to a radically new environment in new ways, educators are being asked to do the same. In discussing RJR's commitment of \$30 million to educational experimentation, RJR Nabisco's CEO Louis Gerstner underscored the company's interest in seeing educators break existing molds.

● *To avoid a repetition of the situation in which yesterday's solutions become today's problems, the educational community must be selective about choosing from the great variety of solutions now being touted.*

Some of the solutions espoused, such as employee empowerment, make good educational sense. Others, such as the entrepreneurial school system (in which schools compete for students and money), do not.

What renders the myriad of proposals for change even more confusing is that they often come bundled together. The same proposal that supports greater teacher authority might be found together with a call for parental choice. At the local level, one of these proposals might be desirable and another might not. We must take care to untie the bundles so that individual proposals can be considered on their own merits.

● *All of this suggests that there is a great need for dialogue and the sharing of information and ideas among educators, business leaders, and community members. Never before has this exchange been more important.*

Such an exchange will require that educators be receptive to hearing about the ways in which education can contribute to our economic growth and the need for change. It will also

require business leaders and community members to understand the real constraints (financial as well as bureaucratic) that educators face in supporting instructional improvement. It is curious that no major business forum on education has yet included actual classroom teachers.

● *To come to terms with these changes, it would be prudent for the NEA to begin considering some concrete steps to take in the near future.*

Initially, this might involve the development of a map of the reform movement (with key players, organizations, and points of greatest promise for our membership).

Second, we need to work to develop an expanded agenda on which educators, business leaders, and community members can agree. Many of the specific proposals advanced thus far fall into a relatively narrow band. The consensus on educational goals that has emerged from the educational summit with our nation's governors may be a useful point of departure for such a discussion.

Third, we need to explore the ways in which our traditional vehicles for member advocacy (collective bargaining and political action) can be used to create appropriate changes within public education.

Finally, we might consider a concerted outreach effort for key policy groups, policymakers, and business interests. Many individuals interested in education reform know very little about the actual experience and conditions of education today. To avoid the destruction that often accompanies a lot of power and a little knowledge, these people need to be kept informed.

SCHOOLS A PAYING INVESTMENT FOR THE STATE

MASSACHUSETTS SPENT \$13,889,838.00.
OR \$38.35 PER PUPIL ON EDUCATION.

TENNESSEE SPENT \$1,628,313.00, OR \$4.68
PER PUPIL ON EDUCATION DURING
THE SAME YEAR.

THAT YEAR MASSACHUSETTS CITIZENS
PRODUCED ON THE AVERAGE \$144 EACH
MORE THAN DID TENNESSEE CITIZENS.
OR A TOTAL OF \$403,969,824.00
MORE THAN TENNESSEE.

IF MASSACHUSETTS GIVES 12 MILLION
DOLLARS MORE TO SCHOOLS AND HER
BETTER EDUCATED CITIZENS PRODUCE
403 MILLION DOLLARS MORE PER YEAR.
HOW MUCH PROFIT DOES THAT STATE MAKE
ON HER INVESTMENT IN EDUCATION?

EDUCATION IS NOT A CHARITY
BUT
THE BEST PAYING INVESTMENT

COURTESY OF NATIONAL ARCHIVES

In April 1918, the

University of Georgia

issued a series of charts

showing the "value" of

education. As is the case

today, our nation's

economic and educational

health were portrayed as

inextricably linked to

one another.



Torrent of Criticism

Profound change in an institution as extensive and socially important as public education usually does not begin quietly. Small-scale changes may escape public notice. However, truly significant reform movements require such enormous public support and commitment that they are often accompanied by a multifront, public assault on the institution's performance.

So it was near the turn of the century. The first salvo of what was to become the most extensive educational reform movement in this century was fired by a pediatrician, Joseph Mayer Rice, after a 36-city tour of American elementary schools. In a series of articles published in *Forum* magazine between October 1892 and June 1893, Rice told the American public what, in his opinion, was wrong with schools (Kliebard 1986). Overwhelmingly, instructors appeared preoccupied with either assigning students to memorize words, poems, and textbook selections or drilling them in a series of exercises designed to help them memorize these same words and poems. Rice roundly criticized educators for their classroom practices and suggested that education was unable to prepare students to cope with the rapid changes of industrialization, urbanization, and immigration (P. Shannon 1989).

The articles caught educators unprepared.

Teachers and school administrators rushed to their own defense, attacking Rice with almost hysterical intensity. Professional educators appeared to be unused to such open and unrelenting attack. Theirs had been a life of relative invulnerability within the walls of their schools and classrooms. (Kliebard 1986)

Perhaps if criticism had stopped with Rice, the threat to the institution could have been contained. Fueled, however, by intense public criticism and scrutiny of all social institutions from city government to the emerging corporate trusts, the attacks on education continued, increasing in intensity and scope. While Rice's early magazine articles had concentrated on the effectiveness of specific educational practices, the growing reform movement soon developed a new theme: *efficiency*. Not only were schools doing a bad job, they were wasteful as well.

Laggards in Our Schools, a work by Leonard Ayres published in 1909, is a powerful example of the thrust of this reform. An educator by profession, Ayres was one of the first to attempt to apply business principles to the educational process. Using publicly available data, Ayres showed that the schools were full of "retarded" (overage for their grade) children (Callahan 1962).

Fifty-eight school systems were compared, using Ayres's Index of Efficiency. To determine the index of a particular district, the number of children who began each year was compared to the number of children who actually finished elementary school. In Ayres's words, "Such a factor would show the relation of the finished product to the raw material." Second, the size

of the school system under ideal conditions was compared to its actual size or to the number of students the system could actually serve. To Ayres, "This gives us the relation of the actual plant in size to the theoretical requirements. Comparing not actual but theoretical size with the actual not theoretical product, we reach an index of efficiency which will express both the educational and economic results in combination and give us a means of rating different school systems on the basis of efficiency" (Callahan 1962).

All in all, by Ayres's calculations, about one-sixth of American school children were repeaters. By his accounting, the "retardation problem" cost American taxpayers about \$827 million annually (Kliebard 1986).

Like others, Ayres saw the undifferentiated curriculum as the problem. American schools were geared to the brightest students, not to the bulk of students who attended them—the children of immigrants and working people. This caused children to repeat classes and reduced the theoretical efficiency of the school system. Ayres's remarks neatly fit a growing perception that American education should become more utilitarian. As early as 1901, Delos Fall, Michigan's superintendent of public instruction, voiced the following sentiment:

The character of our education must change with the oncoming of the years of this highly practical age. We have educated the mind to think and trained the vocal organs to express the thought, and we have forgotten or overlooked the fact that in about four times out of five the practical man expresses his thought by the hand rather than by mere words. In other words, manual training must occupy a larger place in our search for better educational methods with which to meet the demands of this new age. (Fall 1901)

Powerful as these early criticisms were, education reform really came of age in the *Ladies' Home Journal*. In a series of articles published in the *Journal* in 1912, education reform left the policy forum and entered the American living room and gave the issue an urgency and breadth that it had not heretofore enjoyed. The leadoff article in the series, "The Case of 17 Million Children: Is Our Public School System Proving an Utter Failure?" states:



COURTESY OF NATIONAL ARCHIVES

The public school system is intended for all the children of all the people. Yet there are today in America over five millions and a half of people absolutely unable to read and write. (*Ladies' Home Journal* 1912a)

If that did not grab your attention, the next article in the same issue, by Ella Frances Lynch, a teacher in the public schools, boldly pronounced that the American school system was an absolute failure. According to Lynch, "It is stupid in method; it is impractical in plan; it is absolutely ineffective in results" (Lynch 1912). The series assailed education for its pedagogy, curriculum, and waste of resources. One of the principal concerns was that education was not meeting the needs of the larger society. After cataloging the enormous changes taking place in the United States, Frederic Burke, president of the San Francisco State Normal School, told the *Journal*:

Amid this jostle and bustle of modern life, amid this hammering din in the world's workshops, what are our scholars and schools doing to fit the next generation to be skilled workmen in these workshops. . . . We pass from the whirling activity of the world's workshops and find them [the schools] preparing, not for modern workmanship, but, on the contrary, under

a theory of medieval scholarship, still thumbing over old exercise-books used hundreds of years ago for the purpose of insulating the scholar hermits from worldly contact. (Burke 1912)

Beyond the curriculum, the series' authors attacked schools for treating all students in the same way and for being wasteful. They were wasteful in the sense that they took far more time than was necessary to teach students their subjects, and they were wasteful because they caused many students to drop out. The *Journal* quotes A. S. Draper, state commissioner of education in New York, on this matter:

Not more than a third of the children who enter our elementary schools ever finish them. It indicates that the lives of the children are being wasted, that there is a sad lack of definite aim and purpose about it all, and that our educational plans do not rationally meet our conditions. (*Ladies' Home Journal* 1912b)

In the 1930s and 1940s, a hierarchical, tightly regulated learning environment, such as this junior high classroom in Spencer, New York, prepared employees to take their places in similarly hierarchical, tightly regulated companies and government agencies.

The articles in this series are important not only because they aroused interest in public education, but because they directed public interest in education into specific channels. Concerns about the social utility of education, inefficiency, and the need for a major reorganization of education were some of the most prominent aspects of this period of reform.

The Rise of Science-based Industry

Although many American educators were taken off guard by the storm of criticism that erupted around the turn of the century, in retrospect it hardly seems surprising. In the decades preceding education reform, and during the period of reform itself, the American economy was undergoing one of the most far-reaching transformations in our entire national history. From a loose collection of small-scale "mom and pop" enterprises, huge industrial combines began to emerge. These new organizations were capable not only of controlling markets, supplies, and product distribution but also of organizing and controlling research and development. It was from the ranks of the new captains of industry, such as Andrew Carnegie, that the reformers received some of their strongest support.

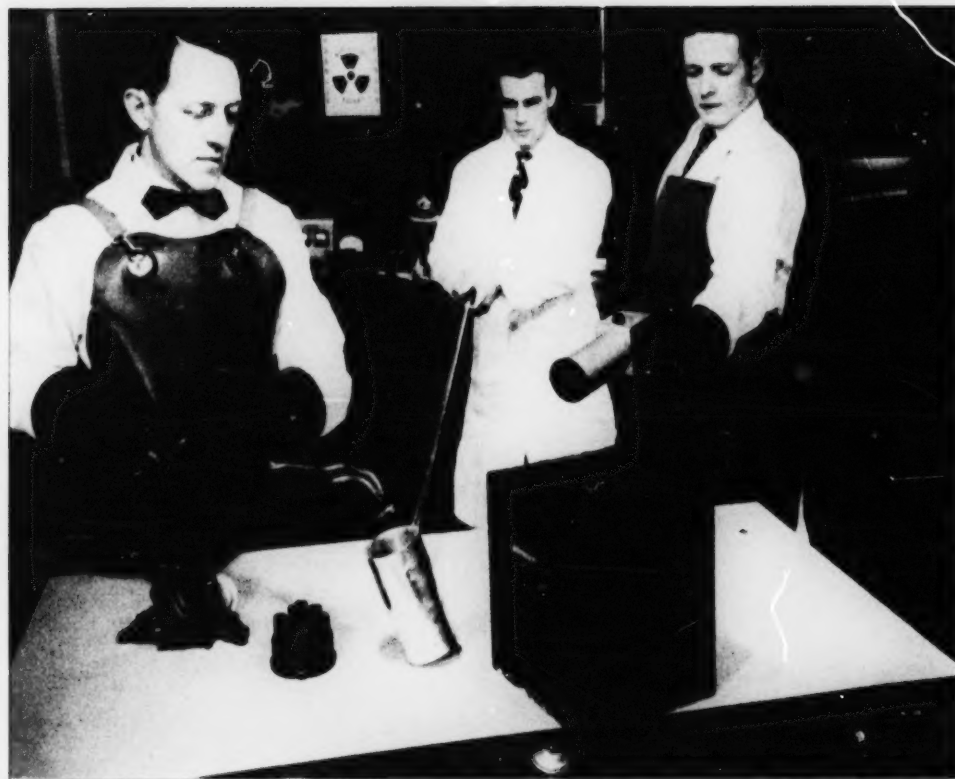
The changing nature of the American economy did more than precipitate the movement to reform American public education. In an important sense, these changes served to shape the process of the educational change. For this reason, it is important to examine the kinds of changes occurring within the larger society at this time of ferment in education.

Obviously, American enterprises were becoming larger. Before the turn of the century, huge trusts were formed in several industries such as steel, tobacco, and sugar. The most famous of these was, of course, John D. Rockefeller's Standard Oil. In addition to the trusts, economic activity was becoming extremely concentrated in many other industries such as elec-

tricity, rubber, and, later, chemicals. The growing size of these corporations permitted an unprecedented control over markets and conferred extraordinary prestige upon their owners. Businessmen were granted a status that had hitherto been reserved only for our nation's leading statesmen, while their beliefs became the foundation of a new, emerging social order. Notions such as efficiency and utility could not fail to strike a responsive chord among those for whom these ideas meant the difference between profit and loss, prosperity and poverty.

Beyond the rapidly increasing scale of their operations, American corporations were undergoing significant changes in the way they did business. Among the most striking of these changes was the growing relationship of scientific development and discovery to the profitability of American corporations. Electrical and chemical industries, which depended upon advances in physics and chemistry for their very survival, provide the most striking instances of this phenomenon. However, even industries such as steel and oil, which depended on the riches of the earth as well as on the laboratory, became more science-dependent. Between 1875 and 1920, the number of research laboratories organized for industrial scientific research grew from zero to somewhere around 300 and included such companies as Bell Telephone, B. F. Goodrich, General Electric, Eastman Kodak, and General Motors (Braverman 1974).

Along with American industry's growing dependence on science came the expanding importance of the engineer and engineering. According to the profession's own reckoning, the engineer was a new breed, the link between "the monastery of science and the secular world of business," whose profession spanned "the gulf between the impersonal exact sciences and the more human and personal affairs of economics and sociology" (Dugald Jackson, quoted in Noble 1977).



COURTESY OF NATIONAL ARCHIVES

After the 1890s, one of the greatest difficulties faced by America's corporate leaders was how to create the structures necessary for the efficient administration of their business empires (Chandler 1962). According to social historian David Noble, it was the analytically oriented engineer-managers who met this challenge. Engineers provided industrialists with rationalized procedures in engineering, manufacturing, finance, and marketing. They developed cost accounting methods, forecasting techniques, statistical controls, and procedures for data collection and analysis. They used this information to assess, plan, and coordinate far-flung plants and personnel. Even more important, they created the formal administrative structures for the new industrial giants, defining the lines of hierarchical authority and communication that would be used to control production (Noble 1977).

The engineers were the first people in industry to attempt to apply systematically the intellectual methods of science to questions of business management... it ought not be surprising that as scientifically trained people became managers, management became more scientific. (Noble 1977)

The best known of the new breed of managers, and someone who was to play a key role in the unfolding drama in education, was Frederick Winslow Taylor. Often called the father of scientific management, Taylor was a systematizer rather than an inventor of ideas. "He gave to a disconnected series of initiatives and experiments a philosophy and a title" (Lyndall Urwick and E. F. L. Brech, quoted in Braverman 1974).

The descendant of a wealthy Philadelphia family, Taylor shunned college in favor of an apprenticeship at a firm owned by friends of his family. On completion of his apprenticeship, he took a job at the Midvale Steel Works where, within a few months, he was made gang boss in charge of the lathe department. After his appointment to management, Taylor initiated a long and bitter struggle to get more work out of the men under him. In his view, workers systematically restricted output in order to prevent existing piece rates from being raised, a process Taylor termed "systematic soldiering." He attributed this to the prevailing system of management. While many plant foremen and superintendents of Taylor's day had at one time

As the link between science and industry increased in importance, many companies established their own laboratories. The three scientists shown here from the early 1950s are using radioactivity to design automobile parts in the Chrysler laboratories, Detroit, Michigan.



COURTESY OF NATIONAL ARCHIVES

A management trainee, center, learns the business from the ground up at the Ford Motor Co. plant in Detroit in the early 1950s.

been masters at their own crafts, they understood that their own knowledge and skills fell far short of the combined knowledge and skills of the men under them. The result of this, Taylor noted, was that

the most experienced managers frankly place before their workmen the problem of doing the work in the best and most economical way. They recognize the task before them as that of inducing each workman to use his best endeavors, his hardest work, all his traditional knowledge, his skill, his ingenuity, and his good-will—in a word, his “initiative,” so as to yield the largest possible return to his employer. (Taylor 1967)

Since it was management’s failure to understand the collective wisdom of the workers under them that formed the cornerstone of this system, the only way systematic soldiering could be prevented was if management appropriated the knowledge of workers for its own benefit. In contrast to existing management practices, scientific management demanded that managers gather and systematize all the knowledge that traditionally had been in the

possession of workers. When this knowledge had been gathered and systematized, the intellectual activity of the labor process was to be removed from the shop and located in the plant’s planning department. Third, the work of individual workers was to be planned for them by management (Braverman 1974). This is the task idea that forms one of the central notions of scientific management. In Taylor’s words, “This task specifies not only what is to be done, but how it is to be done and the exact time allowed for doing it” (Taylor 1967).

Although Taylor was not an engineer, his ideas were widely embraced by engineers and other corporate reformers both in the United States and abroad. This new management science sought not only greater productivity, but also greater control. Managers attempted to make production output more predictable by eliminating unplanned worker intrusions into the labor process. They did this by continuing to reduce opportunities for the individual worker to exercise her/his own initiative and use her/his own judgment.

This was the management system that was very much in vogue when the criticism of public education reached its highest point during the second decade of the twentieth century. Because scientific management made a villain of existing management systems, it comes as little surprise that it was the superintendents, education's managers, who felt the most pressure from the mounting wave of reform. Their unique position within public education and their responses to the widespread criticism of the institution had, and continue to have, considerable influence in the shaping of public education.

Public Education's Engineers

In 1912, James Phinney Munroe published *New Demands in Education*. As had many detractors before him, Munroe castigated the schools for their needless waste of human energy. Unlike the many accounts that merely pointed the finger, Munroe had a solution.

What is to be done? What every other business does when it finds itself confronted with possible bankruptcy through preventable waste, losses, and inferiority of output. It calls in engineering and commercial experts to locate causes and to suggest reforms. We need "educational engineers" to study this huge business of preparing youth for life, to find out where it is good, where it is wasteful, where it is out of touch with modern requirements, where and why its output fails; and to make report in such form and with such weight of evidence that the most conventional teacher and the most indifferent citizen must pay heed. (Munroe, quoted in Callahan 1962)

One of the most striking features of the turn-of-the-century education reform movement was the pivotal role played by superintendents. Whether they were counted among the leading reformers of education's besieged depended largely on their approach to administration. As Munroe's remarks indicate, the profession itself was in a state of definition. Inasmuch as waste and inefficiency were designated as the key problems of education, the elimination of waste and encouragement of efficiency was the key role to be played by the educational administrator. Those administrators who were unable or unwilling to attack the

"waste and inefficiency problem" found themselves adrift in a sea of criticism.

Administrators who were serious about waste, however, reaped rich harvests of financial rewards and public recognition. A 1914 article in the *American School Board Journal* by a well-known educator discussed the competition among cities for the services of efficient administrators. After discussing a western city's hiring of a superintendent who had achieved distinction for "efficiency engineering and unit cost accounting in education," the article prophesied, "As time goes on such incidents will become more frequent and a distinct profession of educational engineers—if such a word may be used for non-physical construction—will emerge" (Brittain, quoted in Callahan 1962).

In retrospect, the designation of waste as the critical problem of education is not difficult to understand. In a dialogue reminiscent of those today, reformers wanted better schools, but they did not want to pay more for them. The only way the rhetoric of reform made sense was if there was substantial waste and inefficiency that could be remedied by new methods of administration.

After all, reformers reasoned, throughout industry managers were squeezing more output from their available human and social resources simply by making needed changes in the administrative and managerial structures of their corporations. Why not do the same thing in education? Those educators willing to take up the gauntlet of efficiency found allies among the most powerful economic and political elite of the land. Conversely, those educators who refused to promote the new gospel of efficiency risked the active opposition of that same elite.

Indeed, it has been argued that the adoption of the theory and practice of business administration was in part a defensive move, which allowed many superintendents to defend themselves against criticism from the business community and to restore public confidence in education. Speaking to the National Council of the NEA in 1913 as a member of the Committee on Tests and Standards of Efficiency in Schools and School Systems, one of the nation's leading educational efficiency experts boldly stated that the ultimate problem of the committee was to "create a new kind of confidence on the part of the public in the work of public schools. This confidence constitutes the capital with which the efficient school system must develop its dividends and activities" (Elliott 1913).

Those educators willing to
take up the gauntlet of
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elite of the land.

Because of the large corporations' hold on American economic, political, and social life at the turn of the century, it was necessary for educators to speak to businessmen in a language familiar to them, to show their responsiveness to the concerns of business. One of the obvious ways they accomplished this was by adopting the same management principles that the business community used. At the end of his 1916 survey of the Denver school system, Franklin Bobbitt, Taylor's foremost disciple in the educational community, noted that

when it is asserted that educational management must in its general outlines be different from good business management, it can be shown that there is absolutely no validity to the contention. All kinds of organizations, whether commercial, civic, industrial, governmental, educational, or other are all equally and irrevocably subject to the same general laws of good management. (quoted in Tyack 1974)

It was in the context of appeasing the business community that the image of the school as a factory became a powerful organizing metaphor for American education. An amalgam of scientific management and cost accounting principles was used to structure educational decisionmaking. An *American School Board Journal* article called "Educational Research Versus War-Time Efficiency" published in 1917 suggested that administrators consider adopting standardized textbooks and supplies in order to reduce costs. It further hinted that the relative costs of courses and of costs per pupil hour in various subjects would provide administrators with a guide to making cost-saving adjustments.

If English costs \$8 per course in one school and \$12 in another, or if Geometry costs 4 cents per pupil hour in one school and 12 cents in another, it is likely that an examination of the conditions resulting in these wide ranges of costs will make it possible to cut the expense in the schools where instruction is most costly. (F. E. Shapleigh, quoted in Callahan 1962)

As the efficiency movement gathered steam, financial considerations came to be synonymous with educational considerations. Frank Spaulding, superintendent in Newton, Massachusetts, told the NEA in 1913 that the "academic discussion of educational values is as futile as it is fascinating." There could be no permanent answers to questions about the relative academic value of a course in Latin or a course in machine shop. However, everyday administrators assigned temporary values to courses like these on the basis of their cost. In his words, "The school administrator simply cannot avoid assigning education values every time he determines the expenditure of a dollar." After comparing the yield per dollar of pupil recitations in different subjects taught in the Newton secondary schools, Spaulding noted that "when the obligations of the present year expire, we ought to purchase no more Greek instruction at the rate of 5.9 pupil-recitations for a dollar. The price must go down, or we shall invest in something else" (Spaulding 1913).

The concern with the cost of courses was complemented by a growing concern over all financial aspects of school operations. Articles, books, and even Ph.D. theses discussed procedures and considerations about the ordering and purchase of supplies and other necessities. Dissertations completed at Columbia Teachers College at this time had captivating titles like *Economy in Public School Fire Insurance* and *Public School Plumbing Equipment*. J. Howard Hutchinson's *School Costs and School Accounting* described a highly intricate system of ordering supplies by teachers that involved copies in triplicate, approval of the principal and the school secretary, and an ongoing record of the order's progress through the necessary channels. In this way every request for supplies as basic as pencils and paper was turned into a complex, lengthy, and frustrating exercise that served to confound the educational process. But, as Hutchinson noted, the system would "make it possible for those in authority to account for the funds appropriated for school purposes" (quoted in Callahan 1962).

Educators were in search of a new language, a language that would enable them both to appease their most powerful critics and to reorganize the educational process. This need for educational discourse to perform both of these functions may be unique. When corporations assess old management practices or

"The price must go down,
or we shall invest in
something else"

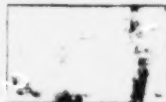
begin to articulate new ones, they do it by reference to their market position, financial history, and recent changes in their industries. In other words, they undertake reorganizations by examining themselves rather than by listening to their critics. More to the point, corporations have their own language. The fact that educators saw fit to borrow the language and ideas of the private sector is in itself a commentary on the weakness of education's position in American society at this time. It also tells something about who was getting on school boards.

The adoption of the discourse of business allowed a number of superintendents to subdue the critics. However, because the discourse also functioned to structure educational decision-making, its use may have also inadvertently created serious distortions in the organization and operation of the schools. When education becomes a secondary consideration to finance and when the discourse of education becomes shot through with financial rationalizations, the educational process must suffer. In the next sections we will explore the ways in which the turn-of-the-century reform movement shaped the schools and how, in some measure, it continues to shape them.

The Corporate Model of School Governance

A movement is shaped by its most active participants. At the turn of the century, reform was disproportionately shaped by America's business and professional elite, who had the most interest in creating an orderly and predictable environment out of the maddening confusion created by succeeding waves of immigrants, rapid industrial expansion, and urbanization. After reforming industry, the corporate reformers joined with other like-minded individuals to "analyze, rationalize, systematize, and coordinate the entire social 'mechanism,' to translate haphazard, uncertain, and disruptive forces into manageable problems for efficient administration" (Noble 1977).

SHALL WE EQUIP OUR INDUSTRIAL ARMY?



"THE SCHOOL, THE UNIVERSITY, THE LABORATORY AND THE WORKSHOP ARE THE BATTLEFIELD OF THIS NEW WARFARE."



"THE WEAPONS WHICH SCIENCE PLACES IN THE HANDS OF THOSE WHO ENGAGE IN GREAT RIVALRIES OF COMMERCE LEAVE THOSE WHO ARE WITHOUT THEM, HOWEVER BRAVE AS BADLY OFF AS WERE THE DERVISHES OF OMDURMAN AGAINST THE MAXIMS OF LORD KITCHENER."

SHALL OUR CHILDREN BE IN- DUSTRIAL DERVISHES?

COURTESY OF NATIONAL ARCHIVES

*The University of Georgia
defines education in the
language of the business
community in a 1918
poster.*

To some degree, the alliance of a large group of superintendents with other professionals and corporate leaders was a marriage of convenience. The latter groups secured the support of a critical group of educational leaders for the kinds of changes they wanted to make, and the superintendents secured the support of some of our most powerful citizens in rationalizing and reorganizing education. At the turn of the century, superintendents found that they could "examine teachers but not hire them, write a course of study but not purchase textbooks, compile reports on school architecture but not decide who would construct the buildings" (Tyack 1974). In responding to America's growing social problems, superintendents sought more power. As David Tyack put it:

More efficient, nonpolitical rational bureaucracies were the answer to poverty, faulty ideologies, crime, social splintering, and class conflict. . . . The corporate model of school governance was predicated on the idea that experts should design and run the system. (Tyack 1974)

Just as corporate boards left the running of the corporation to the newly arisen "expert manager," the new corporate-style school boards would delegate the bulk of administrative decisions to the superintendent and central office staff. In this way, superintendents would free themselves from unwanted, outside political influences and interest groups, gain autonomy, and increase their authority over educational decisions. Superintendents did increase their power during this period. A 1923 study showed superintendents to have increased their power over hiring and firing staff, determining new educational policies, determining the scope of the curriculum, and selecting textbooks (Tyack 1974).

Educational administration became a profession during the turn-of-the-century reform movement. Through the efforts of such leading figures as Ellwood Cubberly at Stanford, George Strayer and Edward Thorndike at Columbia, Charles Judd at the University of Chicago, and Edward Elliott at the University of Wisconsin, a codified body of conceptual and empirical knowledge was created that defined the tasks of educational administration and how they were to be carried out. Its main precepts were spread in forums as varied as maga-

zines and journals, the ubiquitous school survey, committees, commissions, and the increasingly influential schools of educational administration.

Superintendents initiated into the knowledge of educational administration formed a class of expert managers, equivalent in critical respects to the expert managers in private industry. And, as in private industry, the rise of the expert manager in education signaled the rise of hierarchy and clear lines of authority and communication within the entire educational enterprise. Theodore Sizer credits the corporate model of reform for producing education's system of pyramidal tiers with boards and administrators at the top and classrooms at the base.

Directors—"governance"—flowed from top to bottom. . . . What is desired at the peak must find its way to the base. . . . Since the top managers are held accountable for the efficient functioning of the system, they have to know what is going on. Information, standardized and predictable, must flow up from the classrooms at the base, again in a timely predictable fashion. (Sizer 1984)

The rise of the superintendent in education was not an isolated phenomenon, but part of a much vaster change, which included areas ranging from the curriculum to student grouping and evaluation. Under superintendents' direction and support, education became a highly complex, differentiated organization that was more closely adapted to the new social environment (Tyack 1974).

Scientific Management in Education

In the heat of reform, few paused to consider the relevance of scientific management to public education. The management of the process by which children are educated was not perceived to differ in any critical respect from the process by which lighting equipment or chemicals are produced. This kind of thinking led, in turn, to the "industrialization" of education.

Today's education reformers, who point out that our system of education developed in order to meet the demands of an industrial society, must take their analysis one step further. In the first decades of the twentieth century, the organization of public education not only sought to prepare young people to take their places in the emerging industrial society, it also imitated the very structure of industrial enterprises. It was aided in this regard by people from its own ranks as well as by prominent noneducators.

Economy was in the air. In the early years of the twentieth century, William C. Bagley published his influential *Classroom Management*. In it Bagley described classroom management as a problem of economy that "seeks to determine in what manner the working unit of the school plant may be made to return the largest dividend of time, energy, and money" (Bagley 1911). In 1911 the National Society for the Study of Education appointed the Committee on the Economy of Time in Education and charged it with making recommendations for the elimination of waste in the elementary school curriculum, the improvement of teaching methods, and the establishment of minimum standards for each school subject.

Two members of the committee, Frank Spaulding and Franklin Bobbitt, argued for a three-step process for the scientific design of curriculum and instruction. First, analyze the classrooms during instruction to identify the range of teaching methods. Second, measure the effectiveness of various methods, using specially designed tests. Third, use the methods that yield the highest results (P. Shannon 1989). The processes outlined by Bobbitt and Spaulding bear close resemblance to Frederick Taylor's management system. As in the system outlined by Taylor, managers first gather and analyze the information in the educational workplace that had previously been possessed only by teachers.

Managers then assume control of the process in directing teachers to teach in ways that management deems to be the most efficient.

In *The Supervision of City Schools*, Franklin Bobbitt made the connection of school management to Taylorism particularly explicit.

In any organization, the directive and supervisory members must clearly define the ends towards which the organization strives. They must coordinate the labors of all so as to attain those ends. They must find the best methods of work, and they must enforce the use of these methods on the part of the workers. (quoted in Callahan 1962)

In Bobbitt's view, it is supervisors who determine the necessary qualifications of the work force and assume direct and indirect responsibility for the training of workers. In the system outlined in *The Supervision of City Schools*, supervisors have responsibility for providing the workers with detailed instructions on the work to be done, the methods to employ, and the materials to be used in accomplishing the work, contending that "the burden of finding the best methods is too large and too complicated to be laid on the shoulders of the teachers" (Callahan 1962).

The scientific management system of Frederick Taylor and of Franklin Bobbitt after him predicates efficiency on control of the work force. Efficiency is a product of the removal of decisionmaking authority from those actually producing the goods or delivering the services. In Bobbitt's system, teachers are deprived of any significant role in setting goals for the educational process, determining the most efficacious methods for achieving them, and evaluating their own success. Their role is largely that of functionary for management directives.

"The burden of finding
the best methods is too . . .
complicated to be laid on
the shoulders of teachers."

When management collects the knowledge of the classroom, analyzes it, and then uses it to redirect the educational process, an important measure of autonomy is removed from the teachers. Inasmuch as a profession is founded upon the ability of professionals to exercise their professional judgment, the reduction of teacher autonomy that was promoted by scientific management must be considered a significant blow to the status of teaching as a profession. Although the restriction of teacher autonomy did not begin with the scientific management of education, scientific management intensified as well as rationalized the removal of decision-making authority from the classroom teacher.

The transformation of the educational process was accomplished not merely by a change in the relationship between administrator and teachers, but also by the development of educational standards and means of measurement. Two decades after the publication of the articles that helped unleash the forces of reform, pediatrician Joseph Mayer Rice published *Scientific Management in Education*. In it, he declared that supervision should take the form of ensuring that the achievement of students reached clearly defined standards. Further, school administration should be guided by "a scientific system of pedagogical management," that would demand the measurement of results by means of fixed standards. To Rice, "the child's capital is represented by time; and whether certain results are to be lauded or condemned depends upon the amount of time expended in obtaining them." The teacher's job in this system was to ensure that the "child's capital" was expended "without waste" (Kliebard 1986).

The search for methods to measure educational progress led to the development of standardized tests. To education's engineers, the use of standardized tests marked a real turning point in the development of an "educational science." According to Ellwood Cubberly, a

pioneer in shaping the role of superintendents, standardized tests allowed educators to replace personal opinion with the scientific determination of educational progress.

The significance of these new standards of educational measurement . . . means nothing less than the transformation of schoolwork from guesswork to scientific accuracy; the elimination of favoritism and politics from work; . . . and the changing of school supervision from a temporary or a political job, for which little or no preparation need be made, to that of a highly skilled piece of social engineering. . . . Such an important movement is of especial significance to the teacher in charge of a class, to the citizens interested in schools, and to the superintendent responsible for results. (Cubberly 1934)

The "scientific" measurement of educational progress was a necessary complement to the concentration of decisionmaking authority in the hands of a professional administrative elite. The measurement of results was important for two reasons. In the first place, it allowed administrators to monitor classroom progress independently of teachers (a further marginalization of teachers in the educational process). Second, standardized testing gave administrators publicly credible evidence of educational progress or dysfunction and so introduced an element of accountability into the educational process. Administrators were well aware of this potential of standardized tests. In 1912 one superintendent noted that "the results of a few well-planned tests would carry more weight with the businessman and the parent than all the psychology in the world" (Don Bliss, quoted in Callahan 1962). By 1930 administrators' penchants for standardized tests as both measure and arbiter of effectiveness had become so pervasive that one of the educational efficiency movement's sharpest critics referred disparagingly to the "orgy of testing that swept throughout the entire country" (George Counts, quoted in Kliebard 1986).

Administrators' and the public's fascination with numbers continues to this day. Every year, in education's equivalent of the Nielson ratings, administrators, teachers, and the general public wait anxiously for the results of the



INTERNATIONAL NEWS PHOTO

Three children from a kindergarten class in Brooklyn's Public School

191 putting the right pegs in the right holes in a test of coordination and concentration.

district's battery of standardized tests. For many, the results demonstrate success or failure, the effective or wasteful use of the public's tax dollars. Despite the potential limitations and harmful educational effects of standardized testing (e.g., teaching to the test rather than developing other skills), we continue to be mesmerized by education's annual ratings and no doubt will continue to be until widely accepted supplemental sources of evaluation are developed.

Efficiency and the Conditions of Teaching

Scientific management and measurement did a great deal to standardize the form and content of teaching. It is important to emphasize, however, that the roots of standardization extended beyond administration into the conditions of teaching. Among other factors, these conditions included the kinds of educational materials used, the organization of the school day, and the physical layout of schools. These conditions are important for our purposes because not only did they shape American schools in the early years of the twentieth century, but they continue to leave their imprint on schools today.

During the heady days of education reform, standardized textbooks were the basic tool of education. But the dependence of the school systems on standardized textbooks pre-

dated even the drive for greater educational efficiency. As early as the 1880s, standardized texts were in widespread use. The expectation that a largely untrained corps of teachers must teach a variety of skills and subjects led to the early adoption of textbooks by educators (Cuban 1984).

While the reliance on textbooks predated the turn-of-the-century reform movement, the relationship of teacher to text was altered to some degree. As other areas of education became transformed by the developments of the new educational science, textbooks came to have a scientific or expert cast. They represented a strategic alliance between publishers and acknowledged experts in various fields. Speaking of the development of basal readers, Patrick

Shannon writes that the experts needed the basal publishers to spread the results of their research across the country and commercial publishers needed reading experts to gain legitimacy for their materials (P. Shannon 1989).

In this context, the textbook becomes much more than a classroom aid. As the repository of the latest scientific thinking or expert knowledge, the textbook stands over the teacher and directs her or his activity. When the authority of the text is insufficient, administrators may lend the weight of their office to the equation, impressing upon teachers the importance not only of using the textbook, but also of using it in the sequence and manner that it was intended to be used. As a rule, teachers do not even choose the texts. In the decades around the turn of the century, it was the superintendent who had the power to select textbooks.

Today little has changed except in those cases where states have usurped that authority from the superintendent. Once selected, teacher guidebooks instruct teachers in such things as the proper use of the text, the key issues to be addressed, suggested ways for addressing them, student assignments, answers to student assignments, and the proper sequence of instruction. Depending on the subject, teachers have more or less autonomy. In subjects such as reading, where texts are accompanied by teacher guidebooks and student workbooks, teachers have virtually no autonomy to make their own intrusions in the educational process. In this regard, there has been virtually no change since the basal series became popular in the 1920s. Speaking of today, Shannon writes:

At times . . . the materials seem to be the driving force in American classrooms as teachers and students simply react to their logic as expressed in the teachers' guidebook, with up to 70 percent of the classroom time being spent on preparing, completing, and correcting workbooks and worksheets. . . . Rather than consider long-range goals for their school's reading pro-

gram, they let the basals set the goals. Rather than puzzle over the logic of the skill sequences and direction, they push ahead because "you can't understand it, you can only follow it." (P. Shannon 1989)

If teacher autonomy is to increase, teachers must not only gain greater control over their teaching materials, but they also must seek a greater variety of materials than is now permitted by the present textbook system.

To Each According to His Life Path

One of the maxims of the burgeoning efficiency movement was that every person should be given the amount and kind of education he or she required. By this logic, a person destined for a life in the trades should not be taught the Greek tragedies. This would be wasteful. In this way, the notion of class or at least of distinct social groups with widely disparate life chances and expectations became inscribed in the very structure of schools. Rather than serve to equalize societal inequality, schools would mirror and reinforce it. Those students who were college bound would receive one kind of education. Plumbers, laborers, and seamstresses would receive another kind. No less a figure than Ellwood Cubberly expressed the notion that schools should "give up the exceedingly democratic idea that all are equal, and that our society is devoid of classes" (quoted in Tyack 1974).

In order to accommodate large numbers of students, schools began to sort them. While this was justified on the grounds of efficiency, sorting served to shape students to conform to the "multiple entry points and complex job ladders" that stemmed from the growth of large corporations (Carnoy and Levin 1976). The sorting process itself was accomplished in part by the objective testing of students that flourished from the second decade of the twentieth century onward.

The popularity of intelligence testing following World War I is partially explained by the success of the U.S. Army's Alpha Test, which enabled the Army to place about 1,700,000 recruits into jobs suitable to their abilities and temperaments. At the end of the war, a commit-

Rather than serve to
equalize societal inequality,
schools would mirror and
reinforce it.



COURTESY OF NATIONAL ARCHIVES

*Men and women
assembling telephone
receivers at a Western
Electric plant, 1935.*

tee of psychologists connected with the army test developed the National Intelligence Test. Less than a year after this test was issued, 575,000 copies were sold. Between 1922 and 1923, 800,000 copies were sold. In this same period, one firm alone sold 2,500 intelligence tests. Beyond schools, intelligence testing enjoyed widespread use in corporations and in the courts. As one historian of intelligence testing noted in 1926, "The possibility of measuring an individual's intelligence by a short and simple test has captured the imagination of school people and the general public" (Freeman 1934).

Between 1922 and 1923, Edward Lee Thorndike, one of America's leading experts in intelligence testing, tested 8,564 students with two forms of the same test. The population was divided to the extent possible according to the subjects they had studied over the course of that year. In his findings, Thorndike said:

We find notable differences in gain in ability to think as measured by these tests, but they do not seem to be due to what one studies. . . . Those who have the most to begin with gain the most during the year. Whatever studies they take will seem to produce large gains in intellect. (Thorndike 1924)

The implication of Thorndike's research was, of course, that if a student is lacking in native intelligence, no course of study will help her or him to catch up to brighter students. The best that could be done for individual students, therefore, was to channel them into an appropriate course of study (Kliebard 1986).

To the critics of testing and sorting, schools were becoming so focused on channeling students into predetermined positions in society that they might be harming individual students. As early as 1923, John Dewey facetiously noted:

Our mechanical, industrialized civilization is concerned with averages, with percents. . . . we welcome a procedure which under the title of science sinks the individual in a numerical class; judges him with

reference to a capacity to fit into a limited number of vocations ranked according to present business standards; assigns him to a predestined niche and thereby does whatever education can do to perpetuate the present order. (Dewey, quoted in Cremin 1961)

Just as intelligence testing was the means to sort students, a differentiated curriculum was the means to create the people who would fill existing social and occupational roles. Franklin Bobbitt's fourth principle of scientific management was to "work up the raw material into the finished product for which it is best adapted" (quoted in Kliebard 1986). Just as industry did not try to make tires out of leather or seat coverings out of rubber, schools were being advised not to try to make engineers out of factory workers. Moreover, just as the process for manufacturing leather goods was distinct from the process for manufacturing rubber goods, so the process of producing engineers was necessarily distinct from the process for producing factory workers. As Arthur Deerin Call, superintendent of schools in Hartford, Connecticut, told the NEA in 1912:

It will probably be granted that our high schools, like our colleges, have overemphasized a bit of their duties to a selected few. . . . The demand for a short, cheap effective training to meet the demands of the field, shop, conveyance, trade, home, is a real demand. Given a demand, we are disposed in America to meet it. (Call 1912)

"The demand for a short, cheap, effective training . . . is a real demand."

The "scientific" approach to curriculum development was fairly straightforward. In Bobbitt's words:

The central theory is simple. Human life, however varied, consists in the performance of specific activities. Education that prepares for life is one that prepares definitely and adequately for these specific activities. (quoted in Kliebard 1986)

Simply by going out into the world, the researcher could discover which specific activities existed. By investigating the specific activities themselves, it would be possible to determine with some accuracy the specific knowledge, skills, and attitudes required to perform them. These, in turn, would form the objectives of the curriculum. The curriculum itself would be "that series of experiences which children and youth must have by way of attaining those objectives" (Bobbitt, quoted in Kliebard 1986).

David Snedden, a professor of education at Columbia Teachers College after 1916, envisioned the curriculum built on tiny units called peths (for example, a single spelling word). The peths would be combined into strands that were formed around adult life performance practices. The more complex an adult occupation was, the greater the number of peths a student would be required to learn to prepare for that occupation (Kliebard 1986).

Snedden's image of the curriculum extends the metaphor of the school as factory. For over 150 years before the advent of scientific curriculum making, the division of labor in factories around the Western world had been growing increasingly complex. Tasks that were ordinarily performed by one worker were divided into multiple operations performed by many workers. In the eighteenth-century treatise *Wealth of Nations*, Adam Smith describes the science of eighteenth-century pin manufacture.

Not only the whole work is a peculiar trade, but it is divided into a number of branches, of which the greater part are likewise peculiar trades. One man draws out the wire, another straightens it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head; to make the head requires three distinct operations; to put it on is a peculiar business, to whiten the pins is another; it is even a trade by itself to put them in the paper; and the important business about making a pin is, in this manner, divided into about eighteen distinct operations. (Smith [1776] 1970)

Smith concluded that the more productive workshops used different workmen for the different operations. Just as in the manufacturing process described by Smith one commodity was now produced by many workers in numerous, discrete operations, the curriculum to produce a human being capable of performing a specific activity was now composed of numerous, discrete units of knowledge. By identifying the specific components of a life activity, curricula waste could be minimized and control over students' destiny could be maximized.

"Education that prepares
for life . . . prepares for . . .
specific activities."

While activity analysis and the curricula derived from it are no longer with us, our junior and senior high schools continue to be structured around curriculum paths that reflect some assessment (usually numerical) of an individual's life chances. The amount and complexity of knowledge imparted to the individual continues to be proportional to the value of the assessment of the individual. At the present time, when all citizens from all parts of society are being called upon to make greater contributions to our economic and social life, this is an especially vexing legacy of the efficiency movement. When workers on the shop floor as well as in the executive suite are required to make complex decisions, the old differentiated curriculum actually works against America's return to economic health.

The efficiency movement bequeathed an undeniably powerful inheritance of attitudes, structures, and rituals to American education. However, it did not and could not contain within it all of the thoughts and practices about the educational process that prevailed in the early years of the twentieth century. At least two other currents of thought have left behind smaller, but still

significant bequests. Proponents of these other approaches to education are called "pedagogical progressives" and "social reconstructionists" (Tyack 1974).

We must caution the reader that these labels and this characterization are not universal. In *The Transformation of the School: Progressivism in American Education*, for example, Lawrence Cremin appears to combine both pedagogical progressives and social reconstructionists in his discussion of progressive education. Here the term progressive education is used to refer to the progressive pedagogy only, while social reconstruction is used to refer to the traditional social reformers such as George Counts and Harold Rugg. While it is true that some major figures such as John Dewey and Jesse Newlon cross-straddled both groups and that, for a time, both groups shared the same organization (the Progressive Education Association), the differences within the progressive education movement are stark enough to merit considering these groups separately.

The Pedagogical Progressives

The tradition of progressive education, or progressive pedagogy, began in the latter part of the nineteenth century with such figures as John Dewey and continued into the early post-World War I period. While flourishing between 1920 and 1940, progressive education all but died in the period following World War II. However, despite the collapse of the Progressive Education Association and the lack of official sanction for many progressive practices, numerous descendants and experimental offshoots continue even into the present. It would be difficult in the limited space available here to list the major figures and to describe the various educational approaches inherent within this rich tradition. Our intention is merely to identify the boundaries of the discourse we have labeled progressive pedagogy in much the same way that we did the educational efficiency movement.

There are several critical distinctions to be made between progressive pedagogy and the approach to education adopted by the efficiency movement. Unlike the adult-centered approach to instruction advocated by education's "engineers," progressive education was firmly child-centered. Progressive educators believed that children learned differently from adults. It was up to educators to determine how children learned and to provide an appropriate learning environment. Child-centered education may well be considered one of the core principles of progressive education and one with which the vast majority of progressive educators would agree.

In 1926, Morton Snyder, secretary of the Progressive Education Association, stated categorically in an article on the aims of the progressive school that schools are for the children, not the other way around. Children were not to be forced into molds. Curricula, methods, discipline, and school layout were to reflect students as they were, not as adults thought they should be (Snyder 1934).

This was emphasized four years later when Burton Fowler, president of the Progressive Education Association, wrote:

Although our Association has never promulgated or approved anything like a program, either of principles or procedure, we do endorse, by common consent, the obvious hypothesis that the child rather than what he studies should be the center of all educational effort. (quoted in Cremin 1961)

Child-centered education did not mean that children were allowed to do whatever they pleased; rather, it meant that their developmental process would be respected and maintained. For example, in addressing the Parents' Association of his University Elementary School in Chicago, John Dewey noted that until the child learns to work systematically with his intellect, he gets most of his information from his bodily activities. Accordingly, younger children learned history in part by making tools, implements, and weapons. Art was taught by drawing, painting, and modeling. In Dewey's view, what distinguished these activities in school from those outside of school was that school activity was directed and purposeful, whereas outside activity tended to be haphazard and wandering (Dewey 1934). The implication here is that if schools merely let children do what they want to do, the schools would be replicating the out-of-school environment as opposed to educating children.

If learning was to be truly child-centered, learning had to be experimental. In sharp contrast to the rote learning and practice drills of many public schools in the early years of the twentieth century, progressive schools offered a wide variety of hands-on kinds of tasks for children to accomplish. For example, a turn-of-the-century school in La Porte, Indiana, encouraged children to assist each other in making and recording observations of plants and animals and of the wind and weather. This was in addition to more common activities such as drawing, painting, and clay modeling (Cuban 1984; Cremin 1961). The Lincoln School in New York City, initiated by Abraham Flexner, could claim similar innovations. In a class project on boats, lectures and reading material were creatively combined with class experiments on flo-

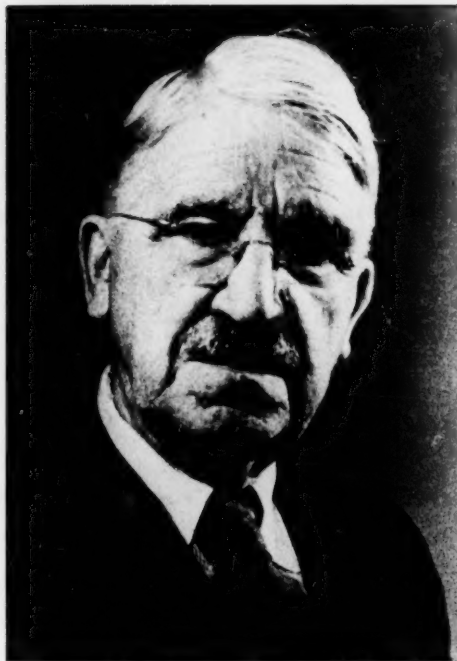
"The child rather than
what he studies should
be the center of all
educational effort."

tation, museum trips, measuring, and drawing and painting in order to give children experiential knowledge of the subject (Cremin 1961).

Some striking similarities exist between the curricula of the schools discussed and contemporary Indianapolis's experimental Key School. The Key School's curriculum is structured to address the seven autonomous kinds of intelligence identified by Harvard psychologist John Gardner: linguistic intelligence, logical-mathematical intelligence, spatial intelligence, musical intelligence, bodily-kinesthetic intelligence, interpersonal intelligence, and intrapersonal intelligence (*Education Week* 1988). In addition to substantial art and music opportunities, students are afforded daily physical activity to develop their bodily-kinesthetic intelligence. Experiential learning plays a major role in school activities. In the summer of 1989, the theme of the Key School's summer program was "Growing Our Garden." The program allowed participating students to both plant the garden and record data surrounding the growth of the garden's plants.

Progressive education differs from the adult-oriented approach of our efficiency experts in another fundamental sense. While curriculum experts like David Snedden advocated designing the curriculum around specific life activities in adult society and then slotting children into education tracks leading to those paths, progressive education emphasized broad, well-rounded educational programs that would prepare children to handle complexity, think critically, and be self-directed. In Dewey's words:

We cannot, whether we approve the fact or regret it, educate the child for special membership on the basis of habit, routine, or tradition. The society for which the child, today, is to be educated is too complex, makes too many demands upon personality to be capable of being based on custom and routine without the utmost disaster. We must educate him by giving him the widest powers and most complete tools of civilization. (quoted in Kliebard 1986)



COURTESY OF NATIONAL ARCHIVES

*John Dewey, philosopher
and education statesman,
made incalculable
contributions to the
theory and practice of
education in the
twentieth century.*

As Dewey's remarks indicate, the desired educational outcomes of progressive educators differed sharply from those promoted by the efficiency experts. In addition to outcomes, progressive education also differed from the efficiency approach in the purpose of education. While education's efficiency experts saw the sole purpose of education as the preparation of children for the adult world, progressive educators saw educational activity as important in its own right. As Dewey remarked in *Moral Principles in Education*:

Who can reckon up the loss of moral power that arises from the constant impression that nothing is worth doing in itself, but only as preparation for something else? (Dewey 1909)

Perhaps today it would be wise to think more seriously about the relationship of student satisfaction to learning and consciously attempt to engender greater student commitment to the educational process. In the private sector, there is a growing recognition of the importance of employee satisfaction in a firm's overall productivity. Progressive education, over 90 years ago, made this same connection with respect to education.

Progressive educators argued strongly for the empowerment of teachers. Again, this differs markedly from the educational efficiency proponents' propensity to locate as many decisions as possible in the hands of the central administration. In Dewey's 1901 address to the National Education Association, he said "as long as the teacher, who is after all the only real educator in the system, has no definite and authoritative position in shaping the course of study, that is likely to remain an external thing to be externally applied to the child" (Dewey 1901).

One of the most famous examples of teacher empowerment was the development of the Denver curriculum by committees of teachers during the 1920s. Jesse Newlon, the superintendent who initiated and directed the process, outlined the major ideas in a paper he wrote while still a principal.

When a group of teachers has worked upon this problem (making curriculum) during a period of two or three years, has carried on a series of investigations, has debated the issues pro and con in departmental meetings, in committee, and in faculty

meetings, and has finally evolved and adopted a set of curriculums, and has determined upon the character of courses to be offered, that group of teachers will teach better and with more understanding and sympathy than they could ever otherwise teach. (quoted in Cuban 1984)

In a 1926 article, Newlon carried his original ideas even further, to the effect of teacher motivation on students, stating that once teachers had arrived at an appreciation of motivation in their own work, they were willing to acknowledge its value for students in their work. In spite of the pressures of teaching required course work, Newlon indicated that progress had been made in the area of student motivation (Newlon 1934).

Far from being a minor detail in progressive education, teacher empowerment forms one of the cornerstones of the entire tradition. If teachers are unable to make decisions about key aspects of the educational process such as the grouping of students, the materials they use, the way students are graded, the subjects they teach, and the daily schedule under which they operate, how can they reasonably be expected to contribute to student learning?

In addition to the few examples given above, progressive practices were implemented in a number of other school districts during the 1920s and 1930s. Among the most notable experiments during this time were New York City and Washington, D.C. In the mid-1930s, Harold Campbell, New York City's superintendent, introduced the Activity Program to that district. It stressed active, student-centered, experiential learning. Teachers were allowed substantial freedom to design instructional programs,

... teacher empowerment
forms one of the corner-
stones of the entire tradition.

progressive schedules, and procedures to follow. Less precisely defined practices in Washington, D.C., involved some measure of self-directed activity by students, experiential learning, and teacher autonomy. Unusual activities described by reporters in a student weekly paper included a bridge party with the players speaking French, a simulated radio broadcast of *The Vicar of Wakefield*, and in-class debates (Cuban 1984).

Although progressive education had strong recommendations from leading members of the education community, the diffusion of progressive practices in U.S. public education was very limited. In his examination of alternate styles of teaching and learning in the twentieth century, Larry Cuban concludes that in the 1920-1940 period a core of progressive practices (for example, small groups, varied forms of student grouping, the joining of two or more subjects, and field trips) did penetrate a considerable number of elementary schools in the districts he studied. However, such practices seldom appeared in more than 25 percent of a district's classrooms.

Adoption of individual practices was highly uneven across schools and classrooms. The ratio was even lower than 25 percent in high schools. In districts without any conscious policy of implementation, little diffusion of progressive practices occurred. What did occur with some regularity were hybrid forms of these core practices that bore some similarity to the original, but nevertheless maintained the teacher-centered orientation of traditional pedagogy (Cuban 1984). To some degree, the influence of progressive education was more notable in professional journals and conferences than in the schools. This is not terribly surprising. In important respects, progressive education ran counter to the dominant economic and ideological currents of the time.

From the early 1960s to roughly the mid-1970s, the progressive tradition appeared to revive with a flurry of experiments. These included such innovations as open classrooms, which permitted active, student-directed learn-

ing. Classrooms contained multiple learning centers and a variety of materials from which students could choose. Instruction occurred mostly in small groups and individual consultations. Open school space experiments encouraged team teaching, nongraded instructional arrangements, and flexible student groupings (Cuban 1984).

As in the earlier period, the diffusion of these innovative practices in American schools was, on the whole, rather minimal. A study of over a hundred primary grade classrooms spread over 13 states by John Goodlad and a team of researchers revealed a preponderance of "telling, teachers' questioning individual children in group settings, and an enormous amount of seemingly quite routine seatwork" (quoted in Cuban 1984). Even in districts such as New York City, which actively supported the open classroom innovation, change was limited. The last wave of innovation broke early, leaving only the mildest traces of its former existence. In Cuban's words:

Compared to earlier reform efforts, the brevity of interest in informal schooling was astonishing. Generally accepted as beginning in the 1960s, by the mid-1970s, concerns for basic skills, test scores, traditional alternative schools, and minimum competencies had replaced open classrooms on the agenda of school boards, superintendents, principals, and teachers. (Cuban 1984)

These latter preoccupations, which signaled the end of a decade of experimentation, continue into our own times. The extent to which these new national pastimes have deflected much-needed attention from school organization, working conditions, and other structural roots of the present crisis in education remains to be assessed. As a society, we remain conveniently preoccupied with the

numerical symptoms of problems whose roots we choose not to investigate.

In one sense, progressive education practices suffered from a kind of adverse social selection, which pushed them aside in favor of the standard classroom, the standard school, standard pedagogy, and standardized textbooks. Progressive education was not alone, however, in falling outside the educational mainstream.

The Social Reconstructionists

In essence, social reconstruction sought to use the public education system (specifically the curriculum) to redress social injustice (Kliebard 1986). Inasmuch as this tradition entailed a rejection of 1930s American society, it stood in sharp contrast to the efficiency movement, which both accepted and supported the existing social structure.

While the foundation of social reconstruction was laid in the 1920s, the notion that education could lead to social improvement (as opposed to individual improvement) extended back into the nineteenth century. Settlement house workers, for example, shared the view that

the real curse of industrialism lay not so much in its physical blight as in its shattering of historic human associations. . . . Such reasoning led them [settlement house workers] inevitably to seek solutions through education as well as politics; hence their assumption that by sharing their knowledge and ideals with the underprivileged they could lead in the rebuilding of the community and thereby release the forces of social alleviation. (Cremin 1961)

In her nineteenth century work *Democracy and Social Ethics*, Jane Addams envisioned an educational system in which the children of factory workers could study the history of industry and the relationship of each task to all others. This would impart to the child a sense of the significance of his labor in the life of the larger community and lend dignity to his labors. Eventually educated workmen would produce "artful products," subordinating machines to progressively nobler purposes (described in Cremin 1961).

Academics such as sociologist Frank Carlton at Albion College saw that the "problem of the twentieth century is to make education an engine for social betterment" (Cremin 1961). Although education had in the past been conditioned by economic and social changes in the larger society, it was necessary for it to play a directive role. This sense that schools should and could improve society was echoed by John Dewey in *The School and Society*, in which he discusses the notion of the school as an *embryonic community*. As the schools train children for membership in these embryonic communities, teaching each child the value of service and the capacity for self-direction, "we shall have the deepest and best guarantee of a larger society which is worthy, lovely, and harmonious" (Dewey 1899).

Perhaps the most direct ancestor of the social reconstructionists was Lester Frank Ward (quoted in Kliebard 1986). In both *Dynamic Sociology* and *Psychic Factors of Civilization*, Ward attacked the complacency of Social Darwinists, arguing that a properly constructed and equitable educational system would result in social progress. As he stated in *Psychic Factors of Civilization*:

The denizens of the slums are not inferior in talent to the graduates of Harvard College. . . . Criminals are the geniuses of the slums. Society has forced them into this field, and they are making the best use they can of their native abilities. (quoted in Kliebard 1986)

This sad state of affairs could be corrected through the proper distribution of our society's cultural capital in our public schools (Kliebard 1986).

The reconstructionists maintained this focus on the *social* as opposed to the *pedagogical* dimensions of schooling. The opposition to scientific management and educational efficiency was unambiguous. George Counts, one of the leading figures in this tradition, attacked the icon of efficiency itself, calling it "an efficiency without purpose, an efficiency of motion." Like others, Counts felt that schools had to come to terms with the entirety of industrial society.

A school cannot become progressive by mere resolve. Unless it... taps the deep-flowing currents of social life, it can only be another pedagogical experiment, of interest to the academician but destined for an early grave. (Cremin 1961)

For this reason, founding a progressive educational movement was as difficult as founding a political party. While schools were not the primary levers of change in an industrial society, they had an important humanizing role to play within it (Cremin 1961).

The reconstructionists exhorted the schools to work for these broader social ends through the curriculum. It thus became critical to incorporate a strong historical and social component into the overall school curriculum. This curriculum would raise social awareness and produce citizens capable of identifying and solving social problems. Harold Rugg, one of the most influential proponents of this educational tradition, wrote:

Lacking a half million dynamic teachers, are we not forced to put into our schools a dynamic curriculum?... A curriculum which deals courageously and intelligently with the issues of modern life and which utilizes in their study the cultural and industrial as well as the political history of their development? A curriculum which is constructed on a problem-organization, providing continuous practice in choosing between alternatives, in making decisions, in drawing generalizations? (Rugg 1934)

In spite of the social reconstructionists' efforts to highlight the relationship of schools to society, this tradition represented only a footnote in public education until the 1930s. The ravages of the Depression, precipitous drops in teacher salaries, and the formation of tax leagues led to educators' growing disenchantment with the business community. This newfound hostility was due in part to educators' belief that it was the business community that was spearheading a campaign to cut taxes (Tyack 1974). This dissatisfaction with industrial and commercial interests, in turn, allowed the ideas of social reconstruction to flourish for a brief period.

In an historic speech to the Progressive Education Association in 1932 called "Dare Progressive Education Be Progressive?" George Counts attacked the audience for ignoring social problems and almost blindly following the most powerful interests in society. He said that they were people

who refuse to see reality in its harsher and more disagreeable forms, and who, in the day of severe trial, will follow the lead of the most powerful and respectable forces in society, and, at the same time, find good reasons for so doing. (quoted in Kliebard 1986)

As the Depression wound down, so did the overall importance of social reconstructionist ideas. In terms of its effects on schooling, social reconstruction, like progressive education generally, had far more presence in journals and meetings than it ever did in the schools. One of the only concrete contributions of this tradition to everyday schooling was a series of social science textbooks written by Harold Rugg. Its ideas, however, can be said to have lived on in contemporary educational theorists who question the social effects of schooling and argue for more egalitarian structures.

Although progressive pedagogy and social reconstruction have been discussed as separate but related traditions, in reality pedagogy cannot be separated from its social effects. As we move into a period in which the comprehensive education of every citizen and employee is seen as more important than it has ever been before in this century, it becomes more critical than ever before to understand these deeper connections.

In his important work on the struggle over the American curriculum, Herbert Kliebard (1986) described curriculum fashions as a stream with several currents. Under some conditions, a weak or insignificant current becomes stronger, only to weaken when those conditions change. In this century the efficiency experts and their descendants have been the strongest stream, with occasional influence

being exerted by other traditions.

If we were to recast Kliebard's metaphor, the fashions of American public education resemble a river into which flow tributaries of various strengths. When conditions are favorable, the waters of one or another of the tributaries make a substantial contribution to the river. When unfavorable conditions prevail, the tributaries slow to a trickle. The central river, however, is always the central river. Regardless of the merit of many of the innovations of education reform, they did not alter the basic course of the river, which had its source in the adoption of scientific management and the formation of district organizations that resembled turn-of-the-century corporations. The growth and overwhelming predominance of large central bureaucracies, the diminution of teacher autonomy, the rigid and differentiated curriculum, the unquestioned reliance on quantitative measures of educational progress, and the focus on waste rather than

on the need for increased resources have each contributed to the holding pattern that public education has been in for a large portion of this century. A principal quoted in a study of American high schools summed it up this way, "Changes come and go, but in the end, life here stays pretty much the same" (Boyer 1983).

As early as the 1930s, considerable uniformity of thought and practice existed in public education, a result of the pressure on local districts from professional associations and public agencies (Tyack 1974). Public education's resistance to change maintained this uniformity, as TheodoreSizer comments in his description of American high schools:

As one visits communities, one is gradually struck by how similar the structure and articulated purpose of American high schools are. . . the framework of grades, schedules, calendar, courses of study, even rituals, is astonishingly uniform and has been so for at least forty years. (Sizer 1984)

The question of why so few changes make it into the classroom has absorbed the attention of many scholars in education and other fields. Why indeed? In part, public school educators resist change because the school structures of which they are a part lack the necessary flexibility to accept and promote needed changes. As early as 1902, John Dewey pointed to the absolute centrality of the organization of education in the educational process. Dewey said that it was such matters as the classification of pupils, the manner in which decisions are made, and the way in which the machinery of instruction is brought to bear on the child "that control the whole system" (Tyack 1974).

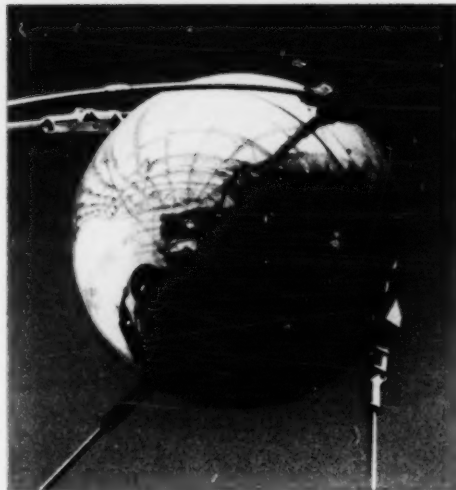
Post-World War II America is replete with attempts of private foundations, government agencies, and educators themselves to improve public education. Proposed improvements touched every facet of school life from administration to pedagogy itself. Administrators were weaned on input-output analysis, cost-benefit analysis, and general systems analysis to help them make decisions. Educators experimented with such modifications to standard pedagogy by teaming up with other teachers and instituting many of the changes associated with open classrooms such as multiple learning centers, self-directed learning, and cooperative learning. Public and private foundation grants encouraged school improvement efforts. In addition to these isolated and localized attempts at school reform, the postwar period generated national movements to prompt educational change. With the launch of Sputnik in 1957, the federal government committed unprecedented sums for research into programmed instruction and curriculum improvement. Based on the work of Harvard psychologist B. F. Skinner, programmed instruction broke each complex learning task into simple units. Instruction followed a prearranged sequence. Students moved on to an exercise only after successfully completing the previous exercise. Successful completion of exercises was rewarded.

Many believed programmed instruction would reduce labor force requirements. Supported by the Department of Defense and the Carnegie Corporation, programmed instruction held out the promise of preprepared, preordered, and simplified lessons that would reduce the skills required by teachers. The self-directed nature of the process promised an increase in the number of students each teacher could effectively teach. In actual fact, however, it failed in any significant way to alter school personnel requirements.

Programmed instruction was also supposed to individualize instruction for students, who were encouraged to proceed at their own pace through the lessons. What happened, though, was that students became bored as each single, complex lesson was broken into multiple simple lessons. In industry, the fragmenting of craft work into simple, repetitive tasks invariably produced the same effect. In some instances, student learning was actually hindered by the new method. For these reasons, and because of the expense of producing materials, programmed instruction never spread very far (Tyler 1976).

Beginning in the 1950s and continuing well into the 1970s, both private foundations and the federal government contributed well over \$200 million to curriculum development projects. The stated purposes of the development efforts were the transfer of university research and scholarship to public schools, the inclusion of secondary school subjects in elementary schools, and the participation of university scholars in the education processes of elementary and secondary schools. The academic subjects involved included science, mathematics, English, the social sciences, reading, art, and foreign languages (Tyler 1976).

For the most part, the materials were developed without much interaction between researchers and classroom teachers and students. This generated its own unique set of problems. Students with no intention of pursuing a career in science were expected to use materials that assumed that they would continue. If teachers had been consulted, they might have informed scientists which materials would be most appropriate for their students and eliminated some of the resistance that often greeted the curricular improvements. Ralph Tyler notes:



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Those teachers who view their role as all-encompassing are likely to perceive a comprehensive curriculum package as threatening their professional autonomy and denigrating their activities. In such cases, they are likely to resist new programs or will interpret them in their own terms. (Tyler 1976)

Despite the considerable federal and foundation investment in curricular and pedagogical improvement in the post-Sputnik years, the jury is still out on the cumulative effect that these particular attempts at school improvement have had on the structure of education. In actual fact, so many individual school improvement efforts have been attempted that educators developed the kind of defensive posture one often sees on beaches in the summertime. When a wave comes, many bathers choose to duck under it and keep still in the remarkably calm waters under the wave until it passes. This is usually easier and safer than trying to ride in to shore in the turbulence of the wave or to confront it directly.

But, then, along came the 1980s, with a wave of unprecedented dimensions. This wave permitted no safe shelter for anyone and swept away the numerous obstacles in its path. In fact, not since the early part of the century had such a sustained outpouring of public concern been focused on the institution of public education. The nature of this most recent reform movement and why it differs from the many smaller movements that preceded it are the subject of the next section.

The launch of the first manmade satellite, Sputnik, by the Russians in 1957 generated both a storm of criticism and significant federal monies for public education in the United States.



Gathering Storm

The latest education reform movement began with all the high drama of a Cuban missile crisis. This time, however, the enemy was within. After months of study, the National Commission on Excellence in Education released its report. Called

A Nation at Risk, it held portents of an imminent

"A rising tide of mediocrity"

national crisis caused by "a rising tide of mediocrity" in our public schools. Appealing to a security-conscious America, the report proclaimed that "if an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war" (National Commission on Excellence in Education 1983). Splashed across newspapers and television, the report's conclusions galvanized America's political, financial, and educational communities.

A Nation at Risk was neither the first nor the only report to criticize education at this time. It was, however, the report that touched off a movement. In this respect, it bears close resemblance to Joseph Mayor Rice's series of articles in the *Forum* in the 1890s. While others had criticized public education, no one had yet succeeded in spawning a movement to change the way schools did business.

Many educators thought the furor would soon die down as it had so many other times. It did not. At the end of 1983, a 50-state survey conducted by *Education Week* discovered that more than 100 state-level commissions had been formed to make recommendations for school improvements (54 had been formed in 1983 alone), 33 states considered the possibility of increasing salaries and status for outstanding teachers, and 7 states approved legislation to increase instructional time (Hill 1989).

A dizzying array of the blue ribbon task forces produced an even more dizzying array of reports and recommendations on how to cure our nation's educational ills. At first, the recommendations could be summed up in one word—*more*. Stiffer graduation requirements, more instructional time (longer school days and longer school years), higher standards for teachers, and more accountability were some of the recommendations that appeared with some regularity. Legislatures dutifully enacted provisions to put many of these recommendations in place. As David Hill comments:

Many of the state actions seemed predicated on the notion that the main cause of educational failure was laxness, an abandonment of standards and accountability. The response, therefore, was more often than not to get tough: to raise standards, tighten accountability, increase testing, beef up curricula requirements, and demand better teachers and better teaching. (Hill 1989)

However, the problem was larger than individuals and the solution was considerably more elusive than the simple measures aimed at teachers and students seemed to imply. It concerned the organization of education itself. The failure of many of the early efforts to render any significant improvements in education is testimony to this. In one sense, the approach taken by education reform in the early 1980s is typical of other areas of American society as well. In an interview with *Fortune* magazine, Allan Kay, Apple Computer's visionary executive, noted:

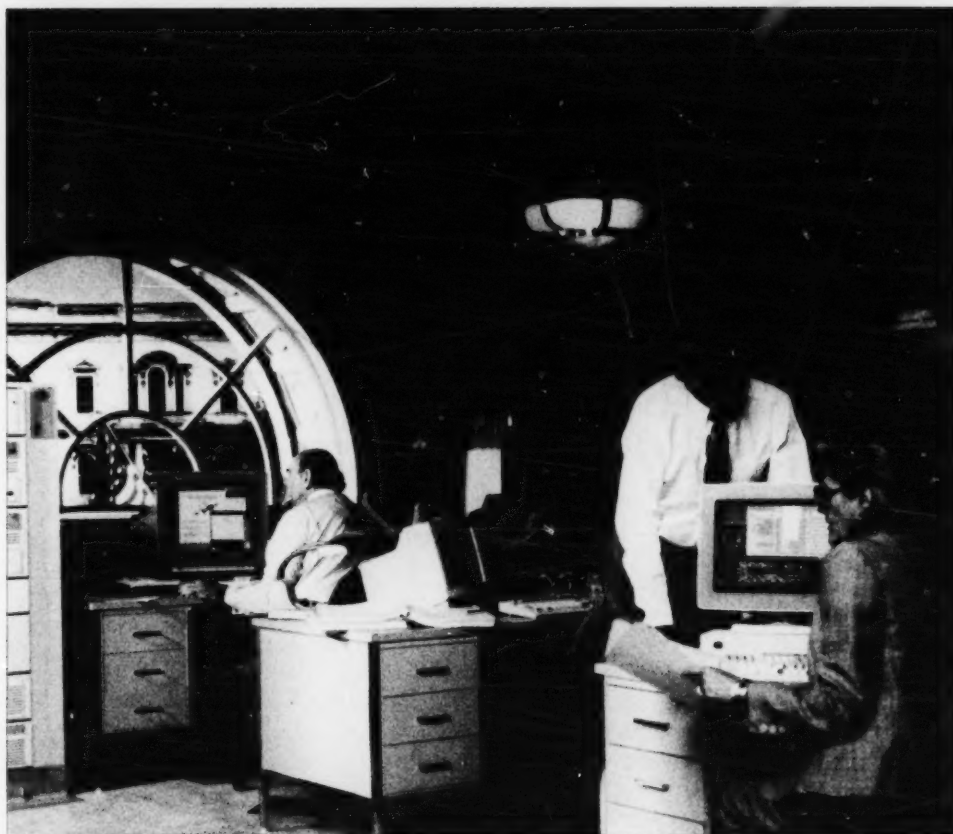
One big problem with American business is that when it gets in trouble, it redoubles its effort. It's like digging for gold. If you dig down five feet and haven't found it, one of the strategies you use is to dig twice as deep. But if the gold is twenty feet to the

side, you could dig a long time and not find it. (Dumaine 1989)

If education reform was to become more than a mere recapitulation of existing instructional and administrative practices, reformers would have to suggest solutions that departed from the simplistic, administrative solutions of the past. In short, reform would have to look at the structure of the educational enterprise itself. While a number of the blue ribbon task forces came to recognize this, the report that actually marked a change in the overall direction of the reform movement from *more* to *different* was *A Nation Prepared*, a report of the Carnegie Forum on Education and the Economy (1986). The report recommends a restructured workplace and a restructured teaching profession. It argues that the workplace should be reorganized to give teachers greater discretion over their work and at the same time should hold them accountable for student progress. Incentives for teachers would be related to schoolwide student performance. Schools would be provided with the necessary conditions for effective instruction, including adequate staffing, technology, and services.

Beyond the workplace, the teaching profession itself would be transformed from a flat structure, with salary based on education and experience, into a multi-tiered structure with lead teachers (holding advanced certificates from a national board for professional teaching standards) at the top and licensed teachers (without certification) at the bottom. To prepare future teachers, the report recommended sweeping changes in teacher education and preparation. Undergraduate training would emphasize a core curriculum with a bachelor's degree in arts and sciences as opposed to a degree in education. Graduate work would lead to a master's degree in teaching, with in-school residencies and internships.

"One big problem with American business is that when it gets in trouble, it redoubles its effort."



IBM PHOTO

*Highly responsive
business organizations
need creative workers
capable of analyzing
problems and developing
solutions in a
cooperative atmosphere.*

What gave the Carnegie task force's report its enormous impact was not that its recommendations for education were the most compelling of the myriad of reports being issued from the far quarters of the United States. What the Carnegie report did that distinguished it from other reports was to marry its recommendations to the future competitive health of the United States. *A Nation at Risk* pioneered this tradition by raising the specter of the U.S. economic and technological preeminence being overtaken by foreign competition. The Carnegie report expanded on this notion as it linked the need for specific educational improvements to the changing nature of the U.S. economy. The report's executive summary plainly stated:

America's ability to compete in world markets is eroding. . . . As jobs requiring little skill are automated or go offshore, and demand increases for the highly skilled, the pool of educated and skilled people grows smaller and the backwater of the unemployable rises. As in past economic and social crises, Americans turn toward

education. They rightly demand an improved supply of young people with the knowledge, the spirit, the stamina, and the skills to make the nation once again competitive. (Carnegie Forum 1986)

The really curious thing about the enthusiastic reception that greeted the report is that there was strikingly little evaluation of the educational effects of its individual proposals. Because the report tied its recommendations to our economic future, many of the people who embraced it assumed that the transfer of the medical model of board certification to education or the stratification of the teaching profession would automatically lead to educational improvement and, hence, to economic improvement. In essence, education reform proposals are often evaluated by what they promise rather than by whether they can actually produce the

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promised results. At a time of record levels of imports and a growing concern about the quality of U.S. goods, the promise of a return to global economic preeminence had extraordinary force.

Aside from the relative merits of individual proposals, one of the most powerful effects of *A Nation at Risk* and *A Nation Prepared* was the strong sense they inculcated in the business, political, and educational policy communities that education reform and economic competitiveness were inextricably linked. It is the widely held nature of this belief that lends the current reform movement its robust and even aggressive character. In the history of this most recent reform movement, many prominent businessmen and policymakers were to emphasize the link between education and competitiveness that the Carnegie task force had drawn. Zane Barnes, chairman of Southwestern Bell, told his colleagues in the business community, "The corporate fight for a competitive edge will be decided in our schools" (Council for Aid to Education 1989). Robert D. Kilpatrick, chairman of CIGNA Corporation, likewise noted:

If I've learned one thing from where I sit, it's that the answer to virtually all our national problems—from international competitiveness to improving our standard of living to the very security of our nation—ultimately rests on one word. That word is "education." (quoted in Council for Aid to Education 1989)

Peter Peterson, a secretary of commerce in the Nixon administration, wrote in the *Atlantic* that

it is hard to imagine any long-term economic renaissance—especially one built on working "smarter"—without a determined investment in the most precious of our assets: the skills, intellect, work habits, health, and character of our children. (Peterson 1987)

The Hudson Institute joined the growing chorus with its *Workforce 2000* study. In a modern restatement of Adam Smith, its study observed that the foundation of national wealth is people. Just as people formed the primary assets of corporations, they formed the primary assets of a nation (Hudson Institute 1987). Beyond the people and organizations cited, many more individuals and organizations, such as the National Alliance of Business and the Committee for Economic Development, clamored for educational change as the best hope for business.

The Crisis of Competitiveness and Its Implications

The fact that leading U.S. industries were indeed experiencing a crisis of competitiveness gave the new reformers grist for their mill. From roughly the mid-1970s onward, the formidable productivity advantages of American firms began to erode. As a consequence of the rapid diffusion of technology throughout much of the developed world, firms in other countries began producing many of the same products in much the same way as American firms. In this new environment, the high wages of the American workers (which were founded on the historically greater productivity of American firms) became a liability.

Wages, however, were not even the major part of the story. Management structures were inflexible and antiquated, unable to anticipate and respond to rapid market changes and new technologies. Because of these factors, many American enterprises found themselves at a competitive disadvantage in the new economic environment and even now are having difficulty responding to change. In relative terms, American productivity continues to decline, compared to that of Japan and Western Europe.

By itself, the diffusion of manufacturing technology could not cause a crisis. What happened, though, was that in addition to using state-of-the-art production systems, foreign firms began competing much more directly for an increased market share in global markets (especially in the lucrative U.S. market). This search for export outlets succeeded in raising competition to a ferocious pitch, which in turn led to precipitous drops in U.S. firms' share of domestic and foreign markets for commodities such as automobiles, steel, rubber, shoes, apparel, and some consumer electronics. Declining

"The corporate fight for a competitive edge will be decided in our schools."

production volumes resulted in an increased cost of producing each item, further weakening the competitive position of many U.S. firms.

The competitive deterioration of U.S. firms in the global marketplace affected not only the firms that competed directly against foreign producers, but also the large, complex networks of each firm's suppliers as well as the system of public infrastructure supporting American firms (for example, education, transportation, and sanitation). In fact, because of the high degree of interdependence that marks the U.S. economy, a downturn in one critical sector (for example, automobiles) has the potential to send ripples throughout the whole economic system.

The level of competition and the problems associated with it will only increase as the countries of the European Economic Community form themselves into one market in 1992. With 320 million people, the newly formed Euromarket will have a larger economic output than the United States (Bergsten 1988). If any newly democratized Eastern European nations join, the size and power of the market, of course, would be larger.

The crisis of competitiveness, in turn, stimulated a dramatic reconceptualization of organizational thinking among many leaders in the business community. This reassessment of what constitutes good management and produces effective organizations has upset a great deal of conventional management wisdom. While individual theorists differ among themselves to some extent, a rough consensus does exist about some of the broader guidelines for industrial restructuring. First of all, top-heavy, richly layered bureaucracies are no longer fashionable. The new thinking is that excessive layers of bureaucracy should be cut to foster greater organizational flexibility, encourage dialogue, and promote innovation within the organization. Silicon Valley entrepreneur T. J. Rodgers creates a new start-up company for new product lines, as opposed to developing each product line in the existing company.

I would rather see our billion dollar company of the 1990s be ten \$100 million companies, all strong, growing, healthy, and aggressive as hell. The alternative is an aging billion-dollar company that spends more time defending its turf than growing. (quoted in Dumaine 1989)

Beyond the advantages enumerated above, simpler organizations will more effectively permit decentralized decisionmaking than will cumbersome bureaucracies. Decentralized decision-making holds out the promise to corporations of making better use of employee skills and knowledge.

In addition to changes in their internal structure, the crisis of competitiveness urges firms to become much more market responsive. According to the U.S. Congress Office of Technology Assessment (1988), people are buying products that are much more tailored to their individual needs. The result of this trend so far has been a growth of "niche" markets within existing markets. Because of the intensification of competition, the new environment requires firms to respond quickly to new market trends in the interest of retaining their shares of individual markets.

The presence of highly differentiated changeable markets for individual goods requires that production be flexible enough to produce small batches of commodities effectively. This suggests that firms will need to become increasingly reliant on micro-electronic-based information technology in future automation efforts. This technology would permit the competitive production of small batches of products at competitive prices and would also permit the greater spans of control characteristic of less complex organizations.

Rapid changes in products and production will mean that a premium will be placed on a firm's ability to manage change. Firms will not survive in the emerging environment if they are unable to accommodate frequent changes. Unlike former years, when relatively stable technology and stable markets encouraged the growth of monuments to bureaucracy, the new economic environment demands supple and responsive organizations.

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Just because the rules have changed, however, does not mean that companies will begin doing things in new ways. To the extent that U.S. firms do begin to pursue the kinds of strategies that have been discussed here, the nature of jobs and the skills required by those jobs will change profoundly. In a number of leading edge companies, these changes are already under way. From them, we can gain some insight into what our economic future could look like and what kinds of demands might be placed on education. Within organizations, jobs are becoming more interdependent. Employees have to think of the whole enterprise when they make decisions, particularly in those settings where the process of automation is far advanced, as in continuous process plants (Baran and Parsons 1986).

Informal know-how is being replaced by more symbolic forms of reasoning. Computer-controlled production processes require employees to monitor and interpret data and take actions based upon those interpretations (Cohen and Tyson 1988). In a pulp mill described by Shoshana Zuboff in *In the Age of the Smart Machine* (1988), workers used computer-generated data to make inferences about the probable causes of production irregularities and ways of improving production efficiency. Employees who are experiencing the displacement of informal know-how find it disturbing. One paper mill operator likened working with information systems to "driving down the highway with your lights out and someone else pushing the accelerator" (Howard 1988).

The distinctions between managers and employees are becoming blurry. With new technologies and new forms of work organization, employees are being required to evaluate information and make decisions. Traditionally, one of the principal distinctions between managers and workers has been that managers had to do more thinking than workers. As jobs come to require additional critical thinking skills, the distinction between managers and employees becomes correspondingly more difficult to make. A bank teller with access to a desktop terminal, for example, can actively sell financial products to customers as well as fill their requests. The terminal allows the teller to call up the customers' records, perform what-if calculations, and explain basic product features to customers. In this new system, managers tend to be more involved in employee skill and role development than in telling employees what to do (Hirschhorn 1987).

Jobs are becoming more complex. As new technologies support the instantaneous receipt and distribution of necessary information, the functions previously performed by several different jobs are being combined into one job. As the insurance industry was computerized, for example, the tasks associated with the jobs performed by the messenger, file clerk, customer assistance clerk, claims adjuster, and policy writer were folded into one job. Although the person performing this new job is sometimes called a claims adjuster, the new job requires far more and different skills than the old job did (Berryman 1987).

Job content is changing much more frequently. As companies adapt to rapid technological change and alter product lines, the content of individual jobs changes as well. This means that employees who occupy those jobs have to possess the kinds of general skills that permit them to adapt rapidly to changing circumstance and to learn new skills as the need arises. They have to be able to learn continually during their working lives, either through on-the-job training or continuing education programs of various kinds.

These changes in jobs imply ever steeper human resources requirements for the United States as a whole. Jobs of the future will require more education (a median educational requirement of 13.5 median years of schooling in 2000 as opposed to 12.8 years in 1984) and more skill. Because companies are changing much more rapidly, employees are expected to be "adaptive learners," performing tasks effectively in unpredictable and rapidly changing situations (Resnick 1987). Because new entrants in the work force are expected to work with and through large numbers of people, employees have to be able to work collaboratively. A profusion of uncertain and ambiguous situations requires workers to be able to exercise higher-order cognitive skills (Berryman 1987). New

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technologies will tend to enhance the intellectual component of individual jobs. The Office of Technology Assessment reports the following:

While the "labor" part of many tasks proves comparatively easy to automate, the part of a job that requires imagination, a capacity for learning, or an ability to work with other people is not easy to automate and therefore represents a growing fraction of all jobs. (U.S. Congress 1988)

In a survey that was carried out in preparation for a conference on the work force of the future, selected U.S. firms described the requirements they have for entry-level jobs. The results are revealing. For Motorola, Inc.:

Entry jobs have become more diversified (multiple-task oriented), with more employee involvement in decisionmaking. Because the company is working with the "quality team" concept, entry-level workers are required to solve problems working in a team environment. Workers will be increasingly expected to work independently and have the flexibility and adaptability to know every job on the line, which was not the case five years ago. (U.S. Departments of Labor, Education, and Commerce 1988)

For Security Pacific:

With the introduction and use of new technology, workers must be familiar with and adept at computer use. Additionally, jobs have become more marketing-oriented and require more "selling" to customers—requiring good communication and interpersonal skills. Overall, the company notes a deficiency of candidates with strong language skills and technical computer skills. (U.S. Departments of Labor, Education, and Commerce 1988)

Management guru Peter Drucker envisions the emergence of "post-business society" in which the work force will be dominated by "knowledge workers." As he describes them, "Their values are heavily skewed toward professional or craft interests, toward what Veblen called the instinct for workmanship—which is not very business focused basically—vs. the acquisitive instinct. Post-business society will put a premium on knowledge and on nurturing the creation of knowledge" (Drucker 1989).

The crisis of competitiveness demands of education a substantial improvement across the board in basic skills acquisition as well as dramatic increases in higher-order thinking skills, communication skills, and the ability to continue learning on the job. This means that the least-skilled, least-educated members of the labor force will have the most difficulty in finding employment in a labor market that reflects new ways of organizing the workplace, even when jobs are abundant.

These demands appear at a time when education is confronting other challenges. In the years ahead, schools will draw proportionately greater numbers of students from minority and immigrant populations. While this gives us an historic opportunity to deal with the elusive problem of economic inequality, it also portends greater stress on the educational system itself. Because of relatively higher rates of poverty among minority populations, dropout rates will increase unless preventive measures are taken. Among white 18- to 21-year-olds, 13.6 percent are high school dropouts. Dropout rates for Blacks and Hispanics are 17.0 percent and 29.3 percent, respectively (Ehrlich and Garland 1988). These rates are even higher in major cities. In addition to higher dropout rates, Blacks' and Hispanics' scores are lower than whites' on the National Assessment for Educational Progress. Math scores for 17-year-old Blacks and Hispanics are lower than corresponding scores for non-Hispanic whites by 22 percent and 27 percent, respectively (Catterall and Cota-Robles 1988).

Increasing poverty, in general, will intensify our educational predicament. A study conducted by the Committee for Economic Development (1987) indicates that children who live in poverty are three times more likely than

"The part . . . that requires
imagination . . . represents
a growing fraction of
each job."

others to drop out of school. Over half of the poorest children drop out of school. Only a quarter of young adults who have dropped out of high school score well enough on a national test to indicate that they will be able to get from one place to another by using a map. Just over a fifth of this group show the skills necessary to balance a checkbook (Caterall and Cota-Robles 1988).

The crisis of competitiveness, coupled with the social and demographic issues discussed above, has laid an onerous burden at education's door. We can be relatively certain that changes will occur in the American educational system. The rationalization of industrial organization that occurred in the early years of the twentieth century had a formative effect on the way American education was organized. The potential restructuring of the American enterprise today possesses similar implications for the organization of education.

An Emerging Educational Paradigm

In the early years of the twentieth century, as American industry was in the throes of rapid expansion and reorganization, educators were facing a mounting criticism of public schools, a rapidly growing student population, large numbers of non-English speaking immigrants, and school systems that were driven by political influence as opposed to any rational principles. As the cutting edge of management science, scientific management provided administrators with a means to silence their critics, a theoretical system to justify the transfer of authority from political officials to school administrators, and a set of precepts to guide administrators' decisions about the movement and allocation of large numbers of people and vast resources. The fact that this process first occurred in cities suggests that the specific problems addressed by the new management science were most acute in the cities. This new doctrine spread from the cities into the hinterlands through professional journals, conferences, and the pressure generated by the outward spread of urban problems.

It is critical to note the role that educators played in the spread of the ideology of scientific management in education. Were it not for the willing, able assistance of key educational

leaders in translating the new management doctrines for a confused and insecure educational community, it is highly doubtful that scientific management would have ever had so profound an effect on American schools. Change in an institution such as public education always requires participants from within the institution itself. Critics can criticize, but only those working in the institution can implement specific suggestions.

Today a confluence of conditions exists that, on the surface, bears a remarkable similarity to the conditions that marked the early years of the twentieth century. The American economy is experiencing significant pressures to change from both global competition and technological change. Public education has been criticized, even vilified, by an avalanche of articles, news spots, and task force reports. Educators, who are doing the same things now that they were doing seven or eight years ago, are wondering what happened and looking for solutions. Most important, educational policy experts, business leaders, and political officials are in the process of generating a new set of core assumptions about how schools ought to be organized. As was the case in the earlier educational revolution, the new paradigm borrows heavily from the language of leading corporate thinkers about effective organizations and practices. As was the case in the early years of the twentieth century, many of the new ideas challenge common practices and assumptions about schooling.

The big word in both business and education today is *restructuring*. It implies a reorganization and regeneration of a firm or a school system. As some corporate executives responded to their own crises by paring unprofitable businesses, eliminating unnecessary management layers, creating participative management systems, and introducing state-of-the-art production systems, they began to infuse into the education reform movement a sense that education's response would have to

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itself.

be appropriately radical. Joseph Alibrandi, the CEO of the Los Angeles-based Whittaker Corporation, typifies the sentiments of many in the business community when he says, "The public schools don't work worth a damn. Band-Aids won't work anymore. We need a total restructuring" (quoted in Putka 1989).

Precisely what total restructuring may look like, however, is pretty often left unspecified. Invariably restructuring means something different than what we have now, but what? It is a sufficiently vague term that does not threaten anyone, nor does it advocate a specific change. It connotes only change on a grand scale. To give more precision to this discussion, some of the more popular notions from business that have trickled into the education reform movement will be presented.

Bigger is not necessarily better. When the basic architecture of American public school systems was developed late in the nineteenth century and early in the twentieth century, many American markets were dominated by large corporations and trusts. Success and size were directly correlated. That is no longer true. Peter Drucker tells us that the days of bigger is better are over. The companies doing best in the global economy today are very small specialists.

The elephant is not a better animal than the cockroach, and the cockroach has outlived untold species of elephants. . . . Big is functional only if it fits the slot that you need. You aren't going to have a small transatlantic airline—or if you do, don't fly with it. (Drucker 1989)

While no one is in any hurry to make school systems smaller, reformers are interested in returning substantial budgetary and instructional autonomy to individual schools. The central office would provide resources and support (if needed), but its direct control would be substantially reduced. In other words, the size of the basic unit of management would be reduced. Another example of this trend is in the

institute or school within a school idea. In both academic and vocational-technical high schools, schools within schools have been created to focus learning opportunities, reduce anonymity, and create a more manageable environment for students.

Schools need the discipline of the marketplace. With some stunning market defeats behind them, American corporations have become much more intensely focused on the customer. With the intensification of global competition, people have many more choices than they used to have. If a company fails to provide good quality products or adequate service to its customers, it will not stay in business. This upsurge in consumer recognition has spilled over into education with arguments about choice in the schools.

According to this line of thinking, the problem with schools is that they are monopolies. Once a child is assigned to a school, it is next to impossible to place her or him anywhere else. And, it does not matter if the school is not working. The answer to this, say the choice proponents, is to provide parents with a choice of where students can go. Base school funding formulas on how many kids are in a school. If a school is ineffective, parents will not send their kids there and the school will not get any money. In *Winning the Brain Race*, Xerox chief, David Kearns, and Dennis Doyle are adamant about this.

An economic model of education is both more democratic and more responsive than a political model. The essence of democracy is choice, and this frame of reference permits the public to think about schools and deal with them constructively. . . . The idea is, of course, an old one. It is a market in which buyers and seller come together to deal with each other. (Kearns and Doyle 1988)

On the "seller" side of this equation, schools and school staffs would be given sufficient autonomy to design distinctive "products" so that parents and students would have real choices to make. Even central offices would not be exempt. Schools would only "purchase" services from central offices if they were cost-effective and of good quality. This line of reasoning has been adopted with few modifications by Marc Tucker in his conception of an entrepreneurial school system. According to Tucker, simply pushing decisions down to the school level will not guarantee accountability. What he suggests is that the superintendent and board empower a district's staff to form groups and plan programs to improve student progress.

The staff units would be allotted pro rata shares of the district's resources to implement their programs, provided they satisfy two conditions: first, that they attract parents willing to enroll children in the program; and second, that they present their program to a board of their peers, who would judge whether it meets professional standards of education. Upon passing both tests, *they are in business*. The entire district would then consist of such entrepreneurial groups, competing with one another for students...the fundamental unit of organization would be the entrepreneurial program. (Tucker 1989, emphasis added)

Tucker assumes that the state government and local school board will have formulated a comprehensive set of criteria to assess student performance as well as adequate methods of assessment. In this way, school programs would be measured for their educational and not their public relations appeal. We remain far from meeting these preconditions, however.

In addition to choice, schools are being subjected to a kind of market discipline in other ways. One of the most dramatic of these is the takeover of school systems. If a corporation does not perform, it goes out of business or gets taken over by a healthier competitor. Now, if a school system is not perceived to perform adequately, it gets taken over or put into trusteeship. A recent example of this was the takeover of the Chelsea, Massachusetts, school system by Boston University. In much the same way that a corporate board would remove an ineffective

management team, Chelsea's school committee invited Boston University to operate the system. A *School Board Journal* article on this subject states:

The school board is clearly in policy control. If anybody's turf is encroached upon, it is the superintendent's, because Boston University's role is much more akin to the superintendent's than to the school board's. (T. Shannon 1989)

Because the school committee invited Boston University's participation, we might consider the Chelsea situation a "friendly" takeover, as distinguished from the "hostile" takeover of the Jersey City school system by the New Jersey State Department of Education.

A final example of market discipline at work in education is the warranty. One of the ways companies that are under scrutiny engender customer confidence is by guaranteeing their products. If customers are a little nervous about buying something, they are made to feel better if the company offers a lengthy warranty on the product. This tells the customers that the company is betting on their products. If a product is defective, the company will be obligated to fix it at no extra charge. Well, the warranty has come to public education. The school committee of Plymouth, Massachusetts, recently approved a warranty program proposed by the district's superintendent. If local businesses find the basic literacy and numeracy skills of recent high school graduates lacking, they can send them back to school to be "retrained" at no extra charge.

A third concept is that schools are most effective when employees are given the authority to make decisions about the instructional process. In the early part of the twentieth century, control was much more important than commitment. Taylorism, for example, developed as a strategy to prevent workers from restricting their output. Many of today's managers are much more interested in commitment than in control.



IBM Puerto

*An example of a
restructured classroom
in which children learn
reading and writing
skills through a
combination of personal
computers, speech, audio
cassette tapes, books,
work journals, and
language games.*

According to MIT's Richard Walton, the control strategy developed in the early part of the nineteenth century in response to a workplace characterized by a large number of simple, repetitive tasks and individual accountability. In the control strategy, managers do the thinking and workers do the implementing (Walton 1985). In a business environment that requires employees to think abstractly, make sound decisions, solve problems, and adjust to rapid changes, the control strategy is ineffective and even dangerous. While these characteristics have always been true of teaching jobs, it has only been in this decade (fully 10 to 15 years after the most recent introduction of employee participation programs in the private sector) that schools have begun to deal seriously with the issue of employee empowerment.

In this particular issue, it is possible to see the critical role played by dominant values and practices in the larger society. John Dewey talked about teacher empowerment almost 90 years ago, but little heed was paid to him on this score. The implementation of his ideas would have to wait until the rest of society caught up with them.

Innovation is the key to success. In the twentieth century, school structure, like industrial structure, has been remarkably stable. The consolidation of major markets by a handful of corporations was the precondition for this stability in industry. The stable human resources requirements that this structure engendered (with a large number of unskilled and semi-skilled jobs and relatively few intellectually demanding jobs) permitted, and even encouraged, schools' resistance to organizational change. As U.S. companies' competitive positions erode, they are being pushed to become more innovative both in manufacturing and product development. To the extent that they respond to competitive pressure, an entirely new set of human resources needs will be generated on a national scale.

With new human resources requirements and difficult social and demographic problems to deal with, schools likewise are being exhorted to examine new approaches to instruction. The problem, of course, is that the structures that promote stability (for example, centralized authority, the Carnegie unit, exclusive reliance on standardized tests to measure

educational progress) discourage innovation. The great irony here is that the public school, which is the preeminent institution where learning takes place in our society, has not historically been a "learning organization." In a learning organization, working and learning are the same thing. The learning about effective practices, which individual employees do on the job, continually transforms the way the entire organization functions. In schools, experiments with student grouping, scheduling, curriculum, and evaluation each would affect numerous other parts of school life. Change generates more change.

The encouragement of innovation at the school level would break the fragmentation and standardization that have marked the basic character of the educational process. This would stimulate learning for students as well as for the staff. As Schlecty and Joslin note:

Schools are not, or should not be, factory-like. Ideas do not develop on a prearranged schedule. Certainty, prediction, and control, all of which are essential to the manufacturing process, simply do not exist in the public school environment. Indeed, the more one attempts to impose certainty and control, the more one is likely to produce curricula and outcomes that are antithetical to other desired outcomes (e.g., creativity and critical thought). (Schlecty and Joslin 1986)

Schlecty and Joslin feel that schools could be improved if some lessons were taken from the management and teaching styles used at IBM and Hewlett Packard. In their view, students should be considered "knowledge workers," and the school should be considered a "knowledge work organization." What this

Change generates more
change.

implies is that students should have greater control over the conditions of their work than they have currently and that they should be evaluated on what they produce rather than how they produce it. In other words, they should be treated like skilled rather than unskilled workers, a proposition that accords with the literature on effective teaching practices.

Setting aside the power of the metaphor of the "knowledge work organization," one is forced to speculate on how the image of students as knowledge workers departs in any fundamental way from the idea of students as self-directed learners that progressive educators fostered much earlier in the century. As far as can be determined, the essential difference is not in the concept so much as it is in the historical context in which the idea is presented. In other words, the language or the covering of the idea has changed, but the idea itself has not. The power of the idea is not in the idea as such, but in the way it resonates with the prevailing currents of thought within the United States. This is why ideas about empowerment and self-direction are much more in the mainstream today than they were when they first appeared.

Some Actual Applications

In addition to the global changes recommended by national policy groups and task forces, the business community has influenced the direction of education reform through a number of private initiatives to help public schools. These vary according to the specific interests of the business or business group involved. As one author on the subject explains:

"Business" does not exist in any monolithic sense. The idea of a single "business interest" in education is a convenient but misleading abstraction. . . . The national advocacy groups for big business are in a different position from that occupied by their local members. (Mann 1987)

Most business help continues to take the form of specific projects sponsored by individual cor-

porations. Adopt-a-school programs, preschool programs, and reading programs are all examples of business-education projects. This project focus is shifting, however. A new form of business-education partnership is emerging that has the following elements: a coordinating structure, multiple purposes, multiple players, and stability (Mann 1987).

As an example, several years ago in Philadelphia volunteers from the largest local corporations joined forces with local universities to form the Committee to Support Philadelphia Public Schools. The business group wants to restructure the city's 21 comprehensive high schools, increase employability of students, reduce dropout rates, and increase the rate of college attendance among the city's students.

As provocative as these new partnerships sound, a word of caution is in order. Public/Private Ventures, a Philadelphia consulting firm, examined nine well-known examples of business aid to education (including the Boston Compact) and found no evidence of learning attributable to any of them (Putka 1989). Individual efforts are often plagued by changes in top management, changing corporate priorities, funding reductions, and business's failure to monitor the program for results on an ongoing basis.

Far more significant in terms of the likelihood of their leading to large-scale reform are the single school experiments receiving corporate support. In Minneapolis, General Mills provides support to the Public Academy, a K-4 school that opened the 1988-89 school year with nine teachers and 140 students. The Chiron School, another Minneapolis experiment supported by Honeywell, Cray Research, and other local companies, has just opened. It will have a longer school day, teacher hiring based on merit, and classes that will rotate among three sites, including the offices of Honeywell. Pacific Telesis earmarked \$2 million for an education

fund to set up model schools based on the recommendations of the California Business Roundtable. The recommendations include year-round classes, freer choice of schools, a management role for parents, less district authority, and optional use of private contractors as teachers (Putka 1989).

One of the most ambitious of the corporate ventures in schooling is Chicago's Corporate Community School. It is the first of a planned series of tuition-free elementary schools to be established in major cities throughout the country. Supported by 60 companies, including Sears, UAL, Quaker Oats, McDonald's, and Baxter International, the Corporate Community School is a no-fee, full-curriculum school for children from kindergarten to third grade. Children are chosen at random from inner-city areas. Eventually, the school will accept children from preschool to eighth grade (Council for Aid to Education 1989; Weiner 1989).

The school's educational practices depart radically from those in the surrounding Chicago school system. Children are not given grades; they are not separated by aptitude; and they do not advance through a conventional age-graded instructional system. The school treats each child individually and offers parents quarterly progress reports on their children. The school promotes acquisition in standard curricular areas such as reading, writing, mathematics, and spelling, but with a new twist (Weiner 1989). Delois Haymon, a classroom teacher for five- and six-year-olds, notes, "We stress responsibility, working cooperatively, and solving their own problems" (quoted in Weiner 1989). In addition to its unique instructional program, the school actively seeks parental involvement and support and also coordinates available social services for its students (Council for Aid to Education 1989).

Expenditures per pupil in the Corporate Community School are only somewhere over \$700 per pupil more than in the present Chicago system, even though it operates year round. Its staff and board of corporate executives aim to "demonstrate that replicable methods of success with a randomly selected population of inner-city children can be achieved at a per pupil cost similar to that of the local public schools" (Council for Aid to Education 1989). A recent *Forbes* magazine article explains that its advantage is that it operates outside the bureaucracy that cripples the public school system.

The Prospects for Reform: A Critical Appraisal

Although the conditions exist for successful change in public education, this is not a foregone conclusion. It is also possible that the changes that will be introduced in public schools will prove to be inappropriate. We may be about to witness public education's version of "the operation was a success, but the patient died."

One of the most vexing problems is the terms of the debate about education. In an important sense, the conceptual framework of the reform movement has been imported wholesale from the business community's own "reform movement." While some of these ideas are sound, others have the potential to pose problems for education—for our own organization. For instance, the concepts of employee empowerment and driving decisionmaking to the school level are positive steps to take in creating flexible, responsive educational programs. On the other hand, the privatization of basic school services, or the entrepreneurial version of family choice, may create some problems.

Let's look at choice. Both Kearns and Doyle's proposal and Marc Tucker's proposal reflect the simple application of the ideology of the free market to education. The assumption here is that the entrepreneurial school system will promote competition and competition will promote innovation. Is this assumption warranted? In her review of the literature on family choice, Mary Anne Raywid notes that while many dramatic achievements have been associated with alternative schools representing the single alternative in their districts, the gains

Let's look at choice.

are not as great in alternative systems. As she says, "One gets the sense that the pluses in alternative systems schools are somewhat less pronounced and the gains more modest." This is because the creation of an alternative system is a top-down decision, which could restrict the professional autonomy found in single alternative schools. Additionally, it could bring in teachers who did not choose the system and would not be enthusiastic about it. Finally, optional schools in a district may generate inequality, concentrating the ablest students in some schools and the most marginal students in another (Raywid 1985). In Raywid's view:

If the system is to be equitable in this regard, careful plans and extensive efforts are necessary. Educational options are not an arrangement immediately embraced and used by all. (Raywid 1985)

These objections do not force a rejection of the concept of choice as much as they underscore the difficulties inherent in transposing ideology into a sound policy. When people choose one product over another in the marketplace, it is as much a function of their own perceptions of the quality of the product as the actual quality of the product. Advertising and prevailing public opinions often interfere with the making of sound judgments. For example, when Harley-Davidson was developing a new engine for its motorcycles, its engineering was clearly inferior to its Japanese competitors. To give the company time to make needed engineering changes, the company's styling genius, Willie G. Davidson, produced several variations of the company's basic products, giving the customers the sense of improvement without much of the substance (Reid 1989). (The company eventually made substantial improvements in its engineering, but not before a number of old engines were sold with new covers.) In the absence of adequate measures of student performance (a precondition of choice to which Tucker alludes), will public schools be forced into creating the illusion of change in order to attract students? If choice is to succeed in public schools, educators will have to come to some clear understanding about how to eliminate the problems of assessment, inequality, and other obstacles that stand in the way of its effective implementation.

One of the curious features of reform is the joining of concepts. For example, employee empowerment is often joined with choice. Kearns and Doyle would like to see teachers given more control over their work, but this control would exist in the context of a free market public school system. If educators really are to be given a choice in the proposals they find most acceptable, we must first disentangle these proposals from one another. Reform proposals should be evaluated individually with respect to the contexts in which they would be implemented. As it stands now, we are being given *packages of proposals* with wholesale applications.

A last point on the problems with the discourse of reform is what is not being said. While we are talking about those issues that many members of the business community also find critical, there are a number of issues that have been sadly neglected. One of these issues is student assessment. People within and outside the education community have repeatedly stressed the need for critical thinking skills, the ability to learn continuously, communication skills, and the ability to work cooperatively. Yet virtually every community in America remains wedded to student test scores as the single, most important measure of educational progress. Educators are being told they must do something different, but they are not being given the means to demonstrate their accomplishments. Strong federal support would allow appropriate assessment instruments to be developed, but as yet the federal government has shown scant recognition of this need. Student grouping, how to encourage the systematic use of education research at the school level, and how to translate what we know about effective schools into creating effective school systems are some other critical issues neglected by the main current of the reform movement. In his book on teaching, Larry Cuban provides would-be reformers with an insight into the seeming imperviousness of classroom teaching to the change process:

We must disentangle these proposals from one another.

What seems to be missing from the studies and state legislative initiatives is an awareness of the profound differences between altering the external and structural conditions that shape what happens in schools (high school requirements) and classroom teaching. Connections between the external context (college requirements) and high school structure (six-period school day), both of which shape what happens in classrooms, have been largely ignored in these efforts to improve high schools. (Cuban 1984)

The nature of the discourse of reform is not the only problem with contemporary reform. We are plagued with the doctrine of inefficiency. This is a very curious and persistent visitor in debates on educational policy. According to the doctrine of efficiency, reform won't cost a dime. What educators need to do is to reallocate their existing resources more efficiently. Since the most recent articles on the subject have all departed to greater or lesser degrees from the study of Rochester University economist Eric Hanushek, we will start there. According to Hanushek's review of the literature, teachers and schools differ dramatically in their effectiveness. Yet no strong evidence exists that teacher-student ratios, teacher education, and teacher experience have an expected positive effect on student performance. In other words, there is not a strong relationship between educational expenditures and student performance. As Hanushek points out:

If we think of schools as maximizing student achievement, the preceding evidence indicates that schools are *economically inefficient*, because they pay for attributes that are not systematically related to student performance. . . . A suggestion of inefficiency does not come as a surprise for two reasons. First, educational decision makers apparently [are] not guided by incentives to maximize profits or to conserve on costs. Second, they may not understand the production process and therefore cannot be

expected to be on the production frontier. In other words, much of the optimization part of the theory of the firm and competitive markets is questionable in the case of governmental supply in quasi-monopoly situations. (Hanushek 1986)

The reader may note how inefficiency and the "quasi-government monopoly" go together. There is no doubt that this is part of the push for a competitive choice system. According to some of its proponents, not only would we have variety, but it would be cheaper too.

In Peter Brimelow's "Are We Spending Too Much on Education?" (1986), the italicized statement above the title reads, "Why is it that people who complain about \$600 toilet seats for the military become indignant when someone points out equally flagrant examples of waste in the public schools?" Asserting that education is a "big business," Brimelow scoffs at the returns posted by the rising sums spent on education—declining or flat SAT scores, relatively flat scores of the National Assessment of Education Progress test, and the relatively small proportion of children reading at their grade level. Although Brimelow clearly did not visit any schools and did not talk to any school employees to write the article, he obviously felt his logic to be compelling: If we spend more dollars, we should have higher test scores. Money in, test scores out. Most recently, on the eve of the 1989 NEA Representative Assembly, the *Wall Street Journal* published its editorial "What Doesn't Work?" The article is quite clear on one point: money does not buy better education.

These attacks on school expenditures come at a time when schools are being asked to do

According to the doctrine of efficiency, reform won't cost a dime.

more. Special needs students, an enormous growth in non-English-speaking minorities from many countries, additional skill demands, and an increased need for continuing education programs have all contributed to the strain on public education's resources. Now we are asking schools to reorganize themselves. Many in the business community and its policy forums want empowered teachers. If teachers truly are to be empowered to make decisions, they must be given the time to make those decisions. This means that they will spend somewhat less time in class than they do in the conventional structure of education and that staffing demands will increase accordingly. The dilemma of reform—new demands without new resources—has been a persistent feature of education for much of this century. In his 1928 annual report, the dean of Columbia Teachers College remarked:

One of the most perplexing problems confronting the American educational system arises from the simultaneous impact on the school of three popular demands—that pupils be accommodated in greater numbers, that training of better quality be offered, and that there be greater economy in all public expenditures. . . . The American people want quality and quantity, and at the same time display a solicitude concerning all public expenditures. (Russell 1934)

If education's critics refuse to acknowledge that new programs demand new resources, we will very likely not succeed in this current round of reform. Additionally, while accountability has become the new watchword for proposals to increase funding to education, much remains to be done that cannot be measured by the most often-used measure of accountability—test scores. New social and demographic realities have made it proportionally more difficult to maintain test scores at current levels. It would seem to be an opportune moment for educators and the business and political communities to roll up their sleeves and begin talking about real problems in real schools: the day-to-day shortages of materials, of time and space; the inability of educators to structure their own educational programs; the special concerns of disadvantaged youngsters; and the crying need for all children to develop the complex skills needed to survive in today's world.

Unfortunately, much of the dialogue surrounding education reform takes place without educators. A December 1988 conference, "The New American Workplace," sponsored by George Washington University and the U.S. Department of Labor, had a panel on work force preparation and readiness. It included two representatives of the business community, a former president of a major labor union, and a member of a well-funded, private think tank. Education was the major topic of conversation, yet not one educator was present. It happened again when the president met the governors at the education summit in September 1989.

In conferences and business meetings across the country, educators have been excluded from discussions about their own institutions. The truly sad thing about this is that no one finds it unusual. Can we imagine the crisis of competitiveness being discussed without businessmen present? Can we imagine ourselves in a position in which we are telling businessmen how to solve the many problems which afflict their industries? This indeed would be strange. Yet no one finds it unusual that educators are not present when education is being discussed.

If this marginalization of educators continues, there will be two very unfortunate consequences. First, reform proposals will bear no relationship to reality. If these proposals then turn into legislation or board policy, we will have to gird ourselves for another round of failure and criticism. Second, reform itself will become marginalized. If proposals for the change of our public school system come from outside the system, they do not stand much of a chance of succeeding. Only when those in the educational community actively support a particular change will it actually be implemented. The lessons of the efficiency movement are instructive. It was the superintendents who

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translated the lessons of scientific management into education. Without their support, the criticism would have remained empty rhetoric. This may be one of the most important lessons for the reformers from outside the education community to learn.

In addition to the greater inclusion of educators, the reform movement must develop a common purpose or at least a common focus. Many years ago, John Dewey made note of an enduring pattern of education reform. After a school system is criticized, change is introduced. More criticism ensues and the change is withdrawn. One reason for this unfortunate pattern was that there is "no conscious educational standard to test and place each claimant" (quoted in Kliebard 1986). What exists are multiple standards for assessing the value of individual reforms, each of which may work at cross-purposes with the others (Kliebard 1986). This need for a shared vision of education is precisely what Mary Hatwood Futrell called for in her retrospective on reform in the 1980s. In her words:

We've only recently recognized the need to reexamine the mission of education, and we've only recently embarked on an effort to define education as *both* an instrumental value and an intrinsic one. . . . The world will demand zealous compassion as much as competitive zeal. Just as surely, it will demand emotional resilience, mental agility, moral stamina, and the creative savvy to improvise effective responses to unforeseen challenges spawned by unrelenting change. These virtues represent the *intrinsic* values that, until now, have been all but absent from the debate on reform. (Futrell 1989)

Until the reform movement as a whole is prepared to recognize the larger social mission of education, the endless cycles of improvement that lead nowhere and address nothing will continue. There are some formidable obstacles in the way of successful change in our public schools, not the least of which is the basic inability of many policymakers to understand that raising standards without raising resources, tightening requirements without altering the basic educational process, and using the language of business without understanding the language of education is an almost certain recipe for failure. If we are to initiate successful change, we must talk to one another, we must have the resources to match our task, and we must certainly have a more comprehensive understanding of the problems that plague our school system than we do at present.

It is easy to make change. It is hard to make change that lasts. It is even harder to make change that all parties support. Any number of examples of education reform in the twentieth century pointedly demonstrate how not to implement change. We have learned from the efficiency experts that concepts external to education apply to contexts external to education. They are not *always* appropriate for education. The frenzy that accompanied the launch of Sputnik showed us that curricular and pedagogical improvements that are developed without the support and advice of teachers will not necessarily reflect classroom realities. We have learned from the early years of the current reform movement that change cannot be legislated into existence. We have seen that top-down change does not work. We have come to understand that the problems of education are multifaceted and that no single solution will suffice to solve them. Because not all of us have learned these lessons, however, the reform process continues to repeat the mistakes of earlier years and previous generations. While it presents us with a chance to make a difference for our members and for education, it has elements of peril as well as promise. It becomes critical, therefore, that reform be seen as a critical arena for member advocacy. Advocacy means support for the interests of NEA members and

the Association. Advocacy is a principle that applies to all levels of the Association—local, state, and national. In the context of education reform, the goal of advocacy is the improvement of our members' working lives and of the educational process. We cannot have a strong organization if education does not meet the needs of our society or if confidence in public education is lacking. To be effective advocates in the current wave of reform, we will need to take an active role in the identification of issues, dialogue actively with policymakers, and use our traditional vehicles of advocacy to strengthen our agenda for education.

We might consider developing a map of contemporary reform. To assist in the development of a strategy for reform, we must have a clear picture of who the key policymakers are, which policy groups are actively working on the issue, and what these individuals and groups are saying. We need to monitor what these groups or individuals are saying for potential opportunities and problems. For example, RJR's CEO Louis Gerstner has recently said, "Education is too important to be left to the educators. It's everyone's problem" (Dumaine 1990). Is Gerstner extending a hand to work with our local associations, and, if so, how shall we respond? Given the \$30 million that RJR has earmarked for educational experimentation in U.S. public schools, these are not trivial questions.

Below the national level, we must develop an accurate picture of local projects such as multicorporation partnerships. It will be impor-

tant to determine the principal kinds of issues they have addressed and their successes and failures so that we can pass this information along to affiliates who may be considering such ventures.

We must think seriously about restructuring the nature of the debate about educational change. Even as we avoid the quick-fix proposals that are endemic to every period of reform, it will be important to seriously evaluate new proposals for change and determine the necessary conditions for their success. It will be even more important to identify critical issues that are not being discussed. For example, today's education reformers seldom mention student grouping.

When choice is discussed, almost invariably competition is stressed. Issues of instructional diversity within the system and interschool equity are equally valid considerations, but are seldom, if ever, raised. These considerations must become part of the discussion about choice. We need to make our members and the general public aware of the limitations inherent in the relatively narrow agenda of the mainstream of reform. Many issues unique to public education such as student grouping, the curriculum, and student assessment are given only peripheral treatment simply because people outside education are creating the basic framework within which debate is taking place. Educators and their advocates need to reestablish their position within the debate. Many reformers outside education simply seem unaware that if educators do not support mandates, it is often because they know that they will not work. It is vital that a reform agenda be developed that educators can support. The

consensus on educational goals that emerges from the education summit may be a useful point of departure for such a discussion.

We must explore the ways in which our traditional vehicles for member advocacy (political action and collective bargaining) can be used to create appropriate changes within public education. We need to target which kinds of reform initiatives are best channeled through the state legislatures and which are best left to individual school districts. One of the major problems with the early years of this reform movement was the avalanche of legislation that imposed ill-considered state mandates on local school districts and on problems that defied simple solutions. We might also consider drafting guidelines for legislation surrounding specific kinds of initiatives.

At the local level we might consider the most profitable areas in which to use collective bargaining to initiate and regulate the change process. In many districts across the country, local associations and school boards are negotiating changes in the organization of schools. In Jefferson County, Kentucky, for example, the local association and the school board negotiated an agreement that gives substantial power to local school committees (which include teachers) to make changes in the form and content of instruction. At a press conference in Louisville, NEA president, Keith Geiger, said this agreement proves that "collective bargaining is an effective method for forging the cooperation between teachers and administrators that's needed to create a top-quality education system."

Though it has been excluded in virtually all discussion and debate on educational change, collective bargaining has led to some of the most effective and stable programs of the contemporary reform. Unlike state and local mandates, bargaining ensures bilateral agreement between education employees and administrators. This creates a stable and mutually acceptable framework within which change can take place.

In addition to traditional vehicles for member advocacy, we might consider developing a concerted program for outreach to key policy groups, policy-makers, and business interests. Many powerful individuals interested in education reform know very little about what actually happens in schools. As we have discovered, the combination of a little knowledge and a great deal of power can be quite destructive. A lot of education remains to take place with individuals and groups external to education. They cannot reasonably be expected to know what we are doing and discovering unless we tell them. From our efforts, noneducators could develop a sense of what works and what does not, what is needed for change and what is getting in the way.

Education reform has focused our attention on the educational workplace to an unparalleled degree. This in itself is an important contribution to the culture of our organization. The stunning defeats of many private sector unions in recent years have occurred precisely because they abandoned the workplace to management (Hoerr 1988). The private sector union experience has clearly shown that unions suffer if their industries are ailing. Through our contributions to the educational workplace, we have the potential to improve education, increase the job satisfaction and personal efficacy of our members, and strengthen our own organization. Moreover, the time is right.

... the time is right.

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